

Maternal and Child Health Strengths and Needs Assessment 2005

South Carolina Department of Health
and Environmental Control

Maternal and Child Health Bureau

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Executive Summary

This document is the result of a statewide process that involved a diversified group of stakeholders with emphasis and decisions driven by data. The process began in August 2004 with the establishment of a core-planning group. This group identified stakeholders, created three workgroups and established process methodology. Data books were compiled and reviewed by the workgroups. The workgroups also considered information from a variety of sources including MCH task forces, advisory committees, other collaboratives, provider focus groups, internet based surveys and staff meetings. After much discussion and negotiation, 10 state strategic priorities were established to guide South Carolina's Maternal and Child Health Bureau (MCH) over the next 5 years coupled with the national priorities. It should be emphasized that this was a collaborative process that involved key public and private stakeholders throughout South Carolina.

The new state priorities emphasize strengthening infrastructure and supporting population based services. Priorities reflect a commitment to focused direct services, fortified enabling services, improved surveillance systems, extensive population based strategies, better training and technical assistance, and support to assure access to comprehensive care systems for all South Carolinians. The 10 priorities are:

1. Improve data and surveillance systems. (Infrastructure Building Service).
2. Improve access to a coordinated system of care through a systems approach. (Infrastructure Building Service).
3. Increase access to a coordinated system of care through comprehensive medical home partnerships. (Infrastructure Building Service).
4. Decrease health disparities through the utilization of cost effective strategies monitored through a performance management system. (Infrastructure Building Service).

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5. Reduce unintended pregnancies. (Enabling Service).
6. Increase the application of public health research findings to public health program planning, implementation and evaluation. (Infrastructure Building Service).
7. Increase the implementation of fetal and infant death review processes. (Population Based Service).
8. Increase the initiation and duration of breastfeeding. (Enabling Service).
9. Increase access to developmental screening for children. (Population Based Service).
10. Improve access to comprehensive risk assessments. (Population Based Service).

In the past 5 years, the health care landscape in South Carolina has changed significantly. Public Health capacity at both the statewide and regional levels has been reduced. Budget cuts have had a dramatic impact on the MCH Bureau's ability to build infrastructure and provide direct services. It is important to note, however, that the state public health Agency and the MCH Bureau are positioning themselves for the future. Increased emphasis on utilizing a performance management system, program and process evaluation, work force development, and targeted resources will help move the state toward enhanced program impact.

The priorities will influence decision-making in the MCH Bureau and guide our mission over the next 5 years. This assessment, however, is not a product, but a process. Implementation of the priorities will be revisited constantly to reassess needs, set targets, monitor progress, modify strategies, and realign resources. The MCH Bureau plans to create targeted programs based on sound data, strengthened partnerships, collaborative leadership, realigned resources, and assisting our community partners to adopt appropriate practices. Through strong infrastructure, the health of all South Carolinians will be improved.

Purpose and Framework

The South Carolina Department of Health and Environmental Control (DHEC) Maternal and Child Health (MCH) Bureau strives to assure the health and well being of all children. The mission of the Federal MCH Bureau is to “provide national leadership, in partnership with key stakeholders, to improve the physical and mental health, safety and well-being of the maternal and child health population which includes all of the nation’s women, infants, children, adolescents and their families, including fathers and children with special health care needs” (HRSA, 2005). This strengths and needs assessment aligns with the mission of the Federal MCH Bureau. The strengths and needs assessment will allow the mission to proceed more effectively over the next five years and continue to influence decisions and changes within the South Carolina MCH Bureau.

The purpose of this strengths and needs assessment is to provide and disseminate scientifically credible information to the public, programs, stakeholders and policymakers that can be used to identify existing and emerging needs and to advocate for and ensure that, when possible, effective and accountable programs, services and policies are available to meet those needs. Inherent in the assessment is a process that is inclusive, comprehensive, iterative, useful and doable. This is a five-year project and will be a continual learning process for all individuals involved.

It was initially decided to not conduct a typical needs assessment, but conduct a strengths and needs assessment. This asset-oriented approach allows stakeholders and leaders to recognize the resources and talents within their own organization and build on these to help alleviate some of the recognized deficits. Even with numerous DHEC Agency shortcomings, a surfeit of capacities

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exist which may or may not be currently utilized to their fullest extent. It is anticipated that this strengths and needs assessment will measure and build assets within the MCH Bureau and prevent liabilities in the process. Thus, the priority needs and performance measures in this document will be discussed in an asset framework.

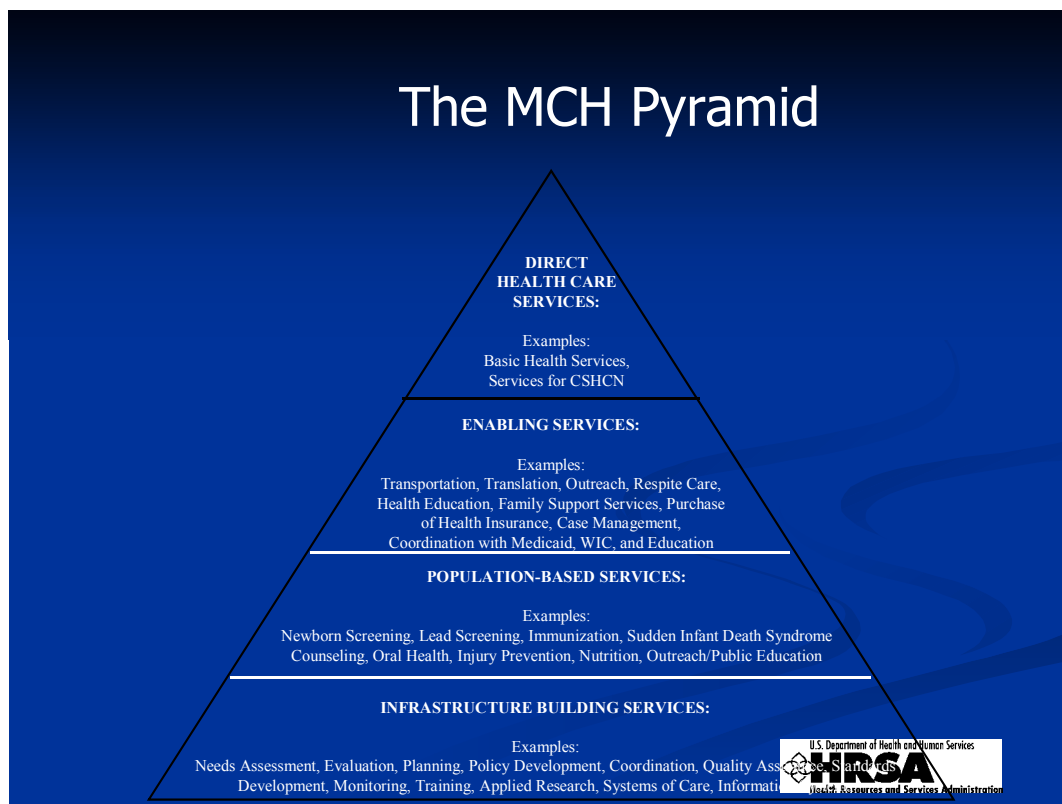
The strengths and needs assessment is founded on the Pyramid of Core Public Health Maternal and Child Health Services. [Figure 1] All planning, activities, discussions and decisions are founded on this framework. The strengths and needs assessment is primarily focused on working down the Pyramid and shifting towards collaboration. Instead of investing the majority of resources and energies toward gap-filling services, part of direct services at the tip of the triangle, more attention will be paid to population-based services and infrastructure-based services. This movement down the pyramid is a paradigm shift for some DHEC management and staff, and could result in resistance and frustration by some especially in the beginning stages. The MCH Pyramid is a critical framework for the strengths and needs assessment, since it will guide the DHEC and the MCH Bureau for the next five years.

In addition, this process is founded on the principle of collaboration. Collaboration of members, both internally and externally, is not only needed during the planning stages but is also critical well after this initial report. In fact, MCH Bureau members will be accountable for collaboration, for opening lines of communication and receiving input and making stakeholders aware of decisions and processes as we move toward performance management. This strengths and needs assessment will become a living document. It should constantly be reviewed, revised, discussed, challenged and articulated through meetings, and activities of the MCH Bureau. With the shift towards collaboration, the likelihood of achieving the MCH Bureau's priorities in the next five years is greatly enhanced. In addition, MCH Bureau leaders recognize the critical

importance of collaboration and decision-making for those working at the local service delivery level, both inside and outside the agency. If changes only occur at the Central Office, clients will never see the changes. Change must begin at the local level and move upward to increase consumer satisfaction with MCH services.

A strengths and needs assessment can only be meaningful, if those involved are dedicated to improving processes, leading to enhanced programming and aiming for optimal improved outcomes and customer satisfaction. This will require a commitment to both stability and change for the entire DHEC team and the staffs of our community partners.

Figure 1 - Pyramid of Core Public Health MCH Services



Process

The strengths and needs assessment process is composed of four phases. It is, however, important to note the activities and discussions will continue following the creation of this report. A fifth phase will involve working towards achieving the priorities and performance measures decided by the Bureau over the next five years.

Phase I – Planning

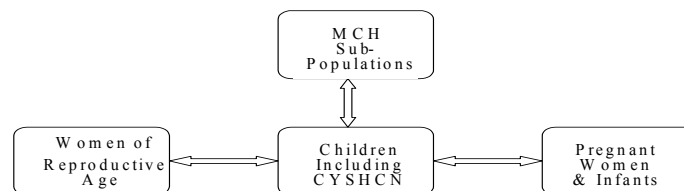
The first phase, planning, is the most critical of all the phases. Planning of the strengths and needs assessment began in early August of 2004 by the previous Director of the MCH Bureau (Sara Balcerek), who assigned Dr. Harvey Kayman, the current SC MCH Bureau Director and MCH medical consultant, as the coordinator for the five year strengths and needs assessment. Three main work groups were created to begin the strengths and needs assessment process that included women of reproductive age, pregnant women and infants and children (including children with special health care needs). [Figure 2] Leaders were assigned to each workgroup. A more detailed description of work group activities is described in Phase 2.

It is important to note the workgroups differ from the HRSA recommended population groups, which included pregnant women, mothers, and infants, children and children with special health care needs. The South Carolina MCH Bureau believes it is critical to include women of reproductive age (15-44 years) as one of the population groups. Since mothers return to the inter-conceptional period following birth, the leaders did not want to exclude this significant portion of the population. The group decided to use a life course perspective which encourages considerations of complex socio-ecological conditions, during and after the peri-natal period, that contribute to adverse health outcomes for women, infants and children. By addressing the needs of women of reproductive age, the health of mothers and future children not yet conceived

will hopefully be enhanced by participating with other agency bureaus and our community partner collaborators as we craft inter-related programs over the life course of our families.

In addition, the leaders decided to have a single children's population group and not separate out children with special health care needs. All children have special health care needs during some phases of their lives; the groups are not dichotomous, but represent more of a shifting continuum. In fact, our system has failed to identify and attend to needs of the majority of South Carolina's children who have special health care needs, such that many are currently not getting the additional services they require.

Figure 2 - Workgroups for Strengths and Needs Assessment



A core-planning group was established and met regularly from August of 2004 until May of 2005 to decide how the process would be implemented. The planning group consisted of the coordinator (Dr. Harvey Kayman), Dr. Jianli Kan (data workgroup coordinator), Luanne Miles (pregnant women and infants workgroup leader), Janet Sheridan and Coleen Collins (women of

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reproductive age workgroup leaders), Kathy Semon and Sarah Cooper (children and children/youth with special health care needs workgroup leaders), Candy Jones (assistant to the MCH Bureau chief), David Steele (information architect) and Holly Gilmore (graduate research assistant). Meetings provided a forum for these leaders to share and discuss crosscutting issues and concerns, as well as lessons learned within their subcommittees. The meetings also provided a place for ongoing review and clarification of the workgroup process, which became contentious at times.

In the formative stages, the group spent time identifying external stakeholders to help recognize gaps in conceptualization. The workgroup leaders believed these stakeholders were vital to the discussions concerning priorities for the maternal and child health population. Refer to the Appendix A for a list of stakeholders and organizations represented from each workgroup.

Since three separate workgroups were formed, the planning group thought it was important to be consistent with methods and delivery throughout the entire process. Scripts were given to each workgroup with a brief outline to be followed in all sessions. In addition, recorders were assigned to each workgroup who recorded minutes of all proceedings. This allowed comparability between groups. Attendance records were also kept. The planning group met one week after the workgroup sessions to assess strengths, weaknesses and potential modifications to the process in advance of future meetings.

In retrospect, this process should have started sooner, and should have clarified future directions. No funds were allocated to this process and everyone involved simply pushed additional tasks into full schedules and over extended responsibilities.

Phase 2 – Implementing Workgroups

Three meetings were held for each population workgroup to assess the major health needs of specific populations and prioritize identified needs. Each meeting had a detailed objective, which need to be completed by the end of the meeting.

The first meeting concentrated on reviewing data related to the population group and identifying gaps and limitations for the future data work plan. Each participant was given a data book created by staff from MCH Epidemiology, containing pertinent statistics, related to the population group through text, tables and trend charts. [Appendix B] The majority of the data for the population specific subcommittees involved vital records data from DHEC's Public Health Statistics and Information Systems (PHSIS) Bureau for select MCH health status indicators along with key program level data. The goal of these assessments was to review interpretative analysis for both state and local (district/county) level data to establish a pattern of improvement, worsening or no change in performance. A second component of the assessment was to determine the extent of disparity among the state's population subgroups. Thirdly, South Carolina's total population and population subgroups was compared to the benchmarks of Healthy People 2010 objectives for the nation. Data sources for the data book included but are not limited to: Vital Data, SC DHEC, SC MCH Data Book, SC Youth Risk Behavior Survey, SC Pregnancy Risk Assessment Data (PRAMS) data, National PRAMS data, SC Teen Pregnancy Data Book, Family Planning Program Data and Temporary Assistance for Needy Families (TANF) Data. The SC Office of Research and Statistics, which is a strong partner with DHEC, also provided some of the data. The Health and Demographics Section of the Office of Research and Statistics receives, processes, distributes and interprets health, demographic and census data in South Carolina.

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Participants identified several data limitations from this meeting, which should guide future data work plans. All groups requested ethnicity data; Hispanics are often accounted for in the numbers but not teased out through the data sources. One group also noted that the “Other” group regarding race and ethnicity is not consistently captured. The “Other” group is becoming more and more important with an increasing Asian population in South Carolina. The group members gave several additional data requests not in the data book to the MCH epidemiologist for further review. Group members in all population workgroups believed it was important to begin linking data sets across disciplines to help future decision-making. DHEC does not have a centralized location for data, which makes navigating the system more difficult. The MCH Bureau plans to update and create surveillance systems in the next five years. An information architecture to enhance user-friendly methods to access data in "real-time" will be created. If decisions are to be driven by data, it is imperative that the data is accessible, accurate and current.

Several strengths and limitations were identified following the first workgroup session.

Strengths included,

- Good turn out in all three workgroups,
- Good participation from group members in the women of reproductive age and pregnant women and infants workgroup, and
- Groups with long histories working well together (i.e. pregnant women and infants workgroup).

Weakness included,

- Poor participation from the range of our outside partners, and

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- Large data books that lacked synthesis and interpretation were significantly delayed and did not lend to analysis.

The workgroup participants also stated they did not see how the data meeting connected with later meetings where priorities and performance measures were selected. As mentioned earlier, the participants, co-leaders and staff were over-stretched during this process, and lack of dedicated funding and dedicated staff resulted in exacerbated strain on staff members.

At the second meeting, members assessed institutional and provider capacity for the sub-populations. Group members discussed capacity related to relevant federal and state performance measures, focusing on three population groups using CAST 5 (Capacity Assessment for State Title V, 2001) as a framework. In addition, capacity concerns not directly related to federal performance measures were discussed (i.e. screenings for children and domestic violence). This workgroup session was more discussion oriented than the previous meeting. Participants examined capacity from levels both within DHEC the needs of the populations served. Strengths identified from this session included improved dialogue in all three groups and consistent themes and focused discussions in all groups. Common themes between groups included,

- The need to make better use of available resources,
- The need to partner with others and work towards the preventative model, and
- The need for partnerships (involve outside partners over a continued period of time).

Weaknesses included,

- Very poor turn out in the women of reproductive age group (3 people attended),
- Lack of participation from external partners,
- Minimal to no participation with Medicaid representatives, and
- Difficulty in measuring uniform capacity among partners.

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The final meeting consisted of two parts with the population groups meeting in the morning and a combined meeting in the afternoon. During the morning session, the objective of was to determine as many as ten priorities per specific population group. These priorities were based on the data and capacity discussions. Facilitators, who had attended both previous meetings and not part of the MCH Bureau, led the groups in their decision making process. The leaders of the workgroups believed it was important to have a non-partial facilitator lead the prioritization process. The morning meeting was a great success for all three groups. Strengths included,

- Excellent participation in all three groups,
- Members us of data and capacity discussions during the brainstorming sessions and prioritization of important needs related to the population,
- Exceptional facilitators, and
- Positive attitudes by all.

Weaknesses included,

- Differing definitions of priorities, and
- Different sizes of the groups (one group had 10 and another group had over 30 participants).

Following the morning session, lunch was provided for all of the participants with music. This allowed participants to meet others from other population groups and network with internal and external stakeholders.

Group members then convened as a whole and discussed outcomes. Each population group had a representative describe the priorities their group believed to be important with related rationale. Group members were also able to ask clarifying questions. Following the discussion, similarities were noted between priorities and some were combined. Members then voted for the

five priorities they believed to be most important. However, due to differing group sizes and differing definitions of priorities (one group used a very narrow, and specific approach and two groups used a very broad and encompassing approach), the voting was not empowering to the majority of the members. Because of different interpretations of operational definitions, the voting process was not carried out consistently, which was a major weakness from this final group session.

Following the final session, group members completed a survey regarding the three workgroup sessions. [Appendix C] See Figure 3 for results from the Likert scales. Participants also answered open-ended questions regarding the workgroup process. Strengths identified by members included,

- The diversity of participants,
- Open dialogue,
- Learning about issues to gain a broader understanding of the health of women and children in South Carolina, and
- The opportunity to be involved in the process and discuss key issues with others.

The majority of the weaknesses addressed by participants focused on the final afternoon session of the third meeting. Some of the participants considered the voting to be unfair due to differing group sizes and were frustrated at the differing perspectives of “priorities” and interpretations between the three groups. Group members believed others listened to their concerns and contributed to the process adequately. Overall, the workgroup sessions were a learning process for all and showed that, despite challenges, groups of people with various backgrounds can work together towards a common mission and meet specified objectives.

Figure 3 - Workgroup Session Survey Results

	Session #1	Session #2	Session #3
Not Productive	2	0	4
Neutral	8	3	8
Productive	16	20	16
Did Not Attend	3	6	0

* Note that not all participants completed the survey.

Phase 2a –Additional Findings

In addition to the workgroup sessions, the leaders of the strengths and needs assessment desired input from a larger audience. An online survey was created with assistance from staff at South Carolina State University - Orangeburg. [Appendix D] The survey consisted of ten questions with four possible responses, ranging from one (minimally adequate) to four (fully adequate). Participants were asked to mark the answer that best reflected how adequately DHEC performed in each of the ten essential public health services to promote maternal and child health in America. See Figure 4 for the responses from the 281 participants. Stakeholders included: All of DHEC health services staff, First Steps, clinicians, SC Department of Education and community collaboratives across the state of South Carolina.

Figure 4 - Results from Online Survey (N=281)

DHEC	Minimally Adequate	Partially Adequate	Substantially Adequate	Fully Adequate
Assesses and monitors MCH status to identify and address problems.	18	52	145	50
Diagnoses and investigates health problems and hazards affecting women, children and youth.	11	68	137	48
Informs and educates the public and families about MCH issues.	19	62	135	47
Mobilizes community partnerships between policymakers, health care providers, families, the general public and others to identify and solve MCH problems.	18	82	121	38
Provides leaders for priority setting, planning and policy development to				

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support community efforts to assure the health of women, children, youth and their families.	20	83	118	42
Promotes and enforces legal requirements that protect the health and safety of women, children and youth, and ensure public accountability for their well-being.	7	53	142	61
Links women, children and youth to health and other community and family, services and assures access to comprehensive, quality systems of care.	13	66	125	56
Assures the capacity and competency of the public health and personal health workforce to effectively and efficiently address MCH needs.	13	79	132	37
Evaluates the effectiveness, accessibility, and quality of personal health and population-based MCH services.	20	77	138	28
Supports research and demonstrations to gain new insights and innovative solutions to MCH related problems.	26	82	113	43

Responses from the survey show the majority of participants believe DHEC performs partially or substantially adequate in the ten essential public health services to promote maternal and child health. Participants were able to make additional comments following the ten questions. A large number noted the reason DHEC is not performing at maximum capacity is because of limited and dwindling funding, resources and staff. Severe staffing shortages limit the agency to adequately address the complex needs of the MCH population. In the words of one responder, “DHEC faces many demands that exceeds its capacity.” Another participant commented: “I have seen resources dwindle and do not believe the Bureau of MCH is as effective as it was 10-15 years ago, due to limited resources.” The largest response “fully adequate” response (n=61) was for DHEC promoting and enforcing legal requirements that protect the health and safety of women, children and youth and ensure public accountability for their well-being. The greatest response for minimally adequate (n=26) was for DHEC supporting

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research and demonstrations to gain new insights and innovative solutions to MCH related problems. The performance of the MCH Bureau, therefore, must be viewed through the filter of available funding and resources. The intentions and passions of MCH Bureau staff for children and families is immense. One participant commented that the “MCH Bureau has very talented, compassionate professionals advocating very hard for their constituents.” The staff, despite limited resources, is a major asset of the MCH Bureau, which must not be forgotten in this time of difficulty.

The MCH Bureau would like to expand the survey to include families, legislators, politicians, church leaders and community members across the state. This could not be completed in time for this strengths and needs assessment report, but is planned for the next several years as this five-year needs assessment process unfolds. It is imperative that consumers of MCH services have input in this process. The MCH Bureau plans to enable the incorporation of performance measures at the local level to track how well DHEC is and is not performing in critical areas. Before the online survey is expanded to a larger audience, modifications need to be made. The survey is currently at a college literacy level and needs to be re-written. It is most likely that family and community members are not aware of terms used in the MCH Pyramid. The survey will be modified to be more consumer friendly and distributed throughout the state. By coupling data analysis with input from the DHEC staff in the regions, allied agency staffs, practitioners, families and community members, the MCH Bureau leadership will be better able to decide how components are fulfilled. Consumer service surveys are in place to get input for the agency, but are generic. We hope to get limited funding should be used most effectively.

Focus groups were also conducted with clinicians, residents and faculty at the Medical University of South Carolina and Greenwood SELF Memorial Hospital. The overarching goal of

the focus groups was to learn how DHEC can improve services and provide a medical home for all children. The focus groups provide guidance for quality improvement activities, programmatic planning and research. Three small groups (less than 12 individuals) participated in each of the focus sessions at the two settings. Ten questions were asked and the session was thirty minutes in length. [Appendix E]

Several themes emerged from the focus groups. The majority of the residents and medical faculty were unaware of the services DHEC provides. Common responses for services used included newborn screening, family support services, BabyNet and a county health department. The main challenge faced by the participants was lack of knowledge regarding available services and eligibility requirements. In short, “DHEC has become invisible to practitioners” (MUSC Focus Group, 2005). Participants recommended DHEC have a central source of information regarding available resources and contact information electronically for physicians to use daily as well as a single phone number to call for additional information. Participants also expressed concern regarding lack of follow-up if they refer someone to DHEC. This was mentioned at several of the focus group discussions. Participants were asked: As a clinician, how do you perceive DHEC? Some of the responses included,

- “Government agency has lots of arms that I don’t understand, mysterious and slow.”
- “An all-encompassing organization that I don’t know how to directly access.”
- “Not visible.”
- “A bureaucracy with a lot of red tape and have trouble navigating.”

The perceptions of DHEC were very telling and will guide decision making about how to best market DHEC to practitioners. Both practitioners and DHEC desire optimal care for children and their families. DHEC services are under-used and will not be optimally utilized until the

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medical community is aware of available resources, and can access those services quickly and easily. By working together with our practitioner partners, we hope to create a more comprehensive, user-friendly health care system. The focus groups also supports the need for DHEC to have a system of information, which is centralized, electronic, up-to-date and accessible to physicians across the state.

In addition, the MCH Bureau plans to conduct focus groups with parents and family members over the course of the next four years. One of the major weaknesses in this present needs assessment is lack of voice from the community. It is crucial that families, who are the consumers of MCH services, be able to articulate their concerns and recommendations to the DHEC in a timely manner. Through these focus groups, a more comprehensive and realistic assessment of the Bureau will be in place. The clinicians and DHEC professionals are not the only “experts” regarding DHEC quality and the strengths and needs assessment will not be complete until these missing more specific information to evaluate the functions of the MCH Bureau in these next few years.

Phase 3 – Setting State MCH Priorities

During the final workgroup meeting it became apparent that the larger group, which consisted of all members of the three workgroups, were not going to be able to successfully or rationally narrow the thirty priorities down to ten priorities. Dr. Kayman created another group that became known as the MCH Needs Assessment Interagency Advisory Group, to determine how best to decide the priorities of the MCH Bureau and use the valuable input from the group meetings. The group decided to delegate to Dr. Harvey Kayman and Holly Gilmore the responsibility to choose the ten priorities based on the capacity discussions from the workgroup meetings and the data available.

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Soon after this meeting, the MCH epidemiologist resigned. This left the group in great need of help to find data to support the choices to rationally narrow from thirty priorities to ten. Partners from other DHEC Bureaus and the University graciously agreed to help with data needs despite their already busy schedules and workloads. This team of data experts consisted of Mike Tian (DHEC Public Health Statistics and Information Systems-PHSIS statistics manager), Khosrow Heidari (DHEC Chronic Disease epidemiology manager), Deiana Kozareva (DHEC PHSIS) and Dr. John Vena (Professor of Epidemiology and Biostatistics at USC School of Public Health). This group provided the data and rationale for MCH Bureau priorities to be contained in the final report. The decision makers used the criteria from the State of Washington, which appeared in the February 2004 Health Resources and Services Administration Manual entitled "Promising Approaches to the Title V Needs Assessment: Preliminary Findings" for the final selection of the priorities. The criteria included the following,

- The prevalence of the problem both in terms of rates and absolute numbers of people affected,
- The seriousness of the issue in terms of morbidity and mortality, and
- The economic impact of the issue and the extent of resources available to address the problem.

Phase 4 – Developing the State Report Through Collaboration

The final state strengths and needs assessment report involved the synthesis of the findings from the workgroups, focus groups, interagency discussions (refer to Partnership Building and Collaboration section) and the on-line survey. Thus, the findings consist of both quantitative and qualitative sources. This report, however is not the final product, but should be considered the beginning of a much more robust process for improving services provided by the MCH Bureau.

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This effort is just one component of a strategic plan to recognize strengths and weaknesses within the MCH Bureau and build on existing strengths while finding ways to improve areas of concern.

The Title V comprehensive needs assessment requirement has provided yet another opportunity for further enhancement of cross-program and interagency sharing of data needs, concerns and plans. Additionally, this process provided the opportunity for data managers in other state agencies to express their current data needs and plans, and how our agency might be more helpful in their efforts. Although our alliance has been positive and longstanding with other state agencies, the data demands of the needs assessment further enhanced relationships with some. State agencies such the Department of Social Services, the Department of Health and Human Services, and the State Budget and Control Board were particularly helpful throughout the process.

District representation on the population specific workgroups provided ongoing sharing of information between District Office and Central Office staff. This collaboration provided a forum for district updates regarding population workgroup activity and areas of concerns and perspectives. The various perspectives concerning the maternal and child health population were considered during the final report. It is the MCH Bureau's hope that this needs assessment document reflects the needs and concerns of all individuals involved in the process as well as the children and mothers living in South Carolina, although we feel that our efforts to date are rudimentary compared to what we plan for the future.

Partnership Building and Collaboration

From 2001 to 2004, DHEC experienced a cumulative state budget cut of 33.96%. Positions have been held vacant to meet shortfalls, requiring existing staff to struggle with growing workloads and additional responsibilities without the benefit of increased compensation. Since 2000, DHEC Central Office health services positions have declined by 16% or 756 full-time positions, which would have been worse, if not buffeted somewhat by, grant funding. Every agency charged with addressing health and social service issues have suffered similar budget cutbacks and reductions in personnel. These reduced resources are stretched thinner than ever by growing health needs.

Collaboration and cooperation between agencies, private service providers and community organizations is often limited but is essential now more than ever. DHEC members, even within the MCH Bureau and Agency, are not aware of many services, collaboratives and initiatives taking place. For a long time, divisions have been operating in silos and have not communicated with the other divisions within the MCH Bureau or the entire Agency. This has caused several missed opportunities for collaboration and utilizing resources to their fullest extent. Throughout this past year interagency collaboration has been encouraged and implemented within several areas regarding children and mothers in South Carolina. Through these meetings, helpful inputs regarding the strengths and weaknesses of the Agency have been voiced. These findings have been documented in minutes, as well as articulated to the new Director of the MCH Bureau (Dr. Harvey Kayman was appointed to this position in early May of 2005). It is evident that changes must be made in priorities and programs, not only based on the input gathered from collaborations, but also on fiscal realities and persistently poor outcomes.

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Some of the agencies actively involved with the MCH Bureau Staff include but are not limited to: State Child Fatalities group, Lead Advisory group, Asthma Alliance, Maternal, Infant and Child Health Committee (MICH) of the South Carolina Medical Association, OB-GYN Task Force, Fetal Infant Mortality Review (FIMR), Commissioners' Pediatric Advisory group, Children's Rehabilitative Services medical advisory group, Baby-Net Interagency Collaborative, Child Health Connection and the Women and Children's Community Research and Practice Collaborative. Some of the meetings include stakeholders such as: Department of Health and Humans Services (DHHS – a major funder, and the South Carolina Medicaid fiscal agents), professors from area colleges and universities, March of Dimes, non-profit agencies, Blue Cross & Blue Shield, clinicians and family members as well as many others. Though collaborations have been expanded, more input from a wider array of practitioners and community members is needed to make this needs assessment more comprehensive. We hope to include groups that have not been able to attend or who were not included before, because our focus was too narrow.

From this, a more holistic MCH Bureau is being formed with less divisions and communication limitations. This holistic approach aligns with the mission of the MCH Bureau. All of the divisions within the MCH Bureau, regardless of the priority areas, are starting to work better together to promote the health of women and children in South Carolina. By continuing to integrate services and resources, DHEC will be better able to weather the challenges of limited financial resources. However, how collaborations should operate is not how they do operate. The MCH Bureau has realized from the initiatives taken thus far that an enormous amount of energy is needed for a collaboration effort to be successful. It would often be easier for the chairman of the collaborative to make all of the decisions, if decide the agenda and disperse resources. A true collaborative, however, receives and uses input from all of its members. It is a

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struggle to work with other agencies that have differing agendas, one of the challenges of collaborative leadership. A committed liaison must also be in place in collaboratives to be a point of contact for all organizations involved; e-mail has shown to be very effective in distributing minutes and gathering input from members outside of the meeting. The MCH Bureau would like to offer online discussion boards in the future for collaborative members to discuss topics of interest more frequently. To accomplish this, the MCH Bureau needs to allocate resources and personnel, specifically to the ongoing needs assessment process

It would be difficult to discuss all of the collaborations and partners with whom the MCH Bureau is involved. Therefore, we have chosen to discuss only a few collaborations that have had some success thus far, beginning with the Child Health Connection. The mission of Child Health Connection is “to assure and promote a systems based approach for the health of children and their families.” Child Health Connection combines talents from a variety of backgrounds and professions. By pooling contacts, knowledge and resources, a synergy was created that participants found energizing. Groups and organizations represented in the collaborative include: Medical University of South Carolina, Palmetto Health Medical Center, Pediatric Residency and University of South Carolina School of Medicine, private practice pediatricians, Family Connections, South Carolina State Budget and Control Board, Department of Health and Human Services, University of South Carolina Arnold School of Public Health, Office of Research and Statistics, and numerous programs within the South Carolina Department of Health and Environmental Control (health services management, women and children’s health services, oral health program, family planning, preventative and rehabilitative services, children’s rehabilitative services, nutrition services, obesity task force, lead screening program, metabolic and audiometric screening, etcetera).

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Members of the Child Health Connection (CHC) have been trained to create online modules regarding DHEC services for physicians, educators and parents across the state. Staff from South Carolina State University - Orangeburg conducted the first module workshop training with over thirty of the CHC members on May 11, 2005. In the module training, CHC team members were educated on how to design a web-site training tool, so they could create and maintain web-based modules for interested citizens and practitioners to easily access information about a variety of programs and topics. Modules were developed for the following areas: obesity, metabolic screening, oral health, BabyNet, mental health, education laws and rights for children and the medical home. The modules should be online in early June 2005. Future module workshop trainings are already in place and modules of other subjects should be online shortly thereafter.

This module training would have been impossible if the CHC had decided to act alone. Dr. Ashok Satpathy and Rasmi Avula, from South Carolina State University - Orangeburg, provided excellent training and funding for the workshop. Dr Satpathy needed content for the modules he created and CHC needed a sophisticated web based system to input their content; the needs of both entities were met through this partnership. One member of the CHC will be leading the marketing of the modules to the intended audiences. The Bureau looks forward to working with the staff at SC State University to expand and enhance the information systems available online, which will be updated regularly and hopefully accessed by a much wider audience, if the marketing campaign is successful.

Three years ago, the Division of Children and Youth with Special Healthcare Needs embarked on a Medical Homes Project to create three or more mentor pediatric practices to model how the MCH Bureau could collaborate with clinicians. The MCH Bureau, through the

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medical homes grant, funded care coordinators, case managers, and disease managers to work directly in these clinical practices, in the care of very vulnerable children and their families. In the evaluation component of this Medical Homes project, it was demonstrated that patients who participated in these programs utilized the emergency department less than the control group, and also were admitted to the hospital from the Emergency Department less often. [Figure 5] Other parameters improved as well, as can be seen in the full evaluation.

**Figure 5 - Evaluation by Amy Brock-Martin, PhD University of South Carolina,
Department of Epidemiology**

GOAL 1: To increase by 10% the number of CSHCN who receive ongoing, comprehensive care coordinated			
Objective 1-1: 90% of all primary care physicians and all family organizations will be provided education about the importance of and essential elements of a medical home, utilizing a broad-based educational program	Objective 1-2: Through the Office of Research and Statistics (data warehouse) further strengthen data baseline for medical homes and track increases in utilization of medical home	Objective 1-3: Educate 90% of physicians and families with CSHCN through a public awareness campaign that promotes family centered care.	Objective 1-4: Implement three mentor home sites over a three-year period across the state.
GOAL 2 To strengthen linkages between primary care and subspecialty physicians to work together with families in ways that provide improved health care to CSHCN.			
Objective 2-1: Educate 90% of primary care and subspecialty physicians on effective subspecialty coordination through a broad-based outreach.	Objective 2-2: 90% of families of CSHCN will be provided education on the appropriate role of primary care physicians and their relationships with specialty and subspecialty providers.	Objective 2-3: Review and promote improved reimbursement for key elements of the medical home including screening and care coordination in Medicaid, SCHIP and private insurance	Objective 2-4: Develop effective ways to link pediatricians, family practice and subspecialty physicians in mentor medical homes, and disseminate lessons learned statewide.
GOAL 3 To improve the linkages between all health care providers for CSHCN and the broad range of community providers and programs serving CSHCN and their families.			
Objective 3-1: Educate 90% of all physicians serving CSHCN and families of CSHCN about the majority of community services and programs families can access by developing and disseminating printed materials based on partner input.	Objective 3-2: Educate a minimum of 50 partner agencies and community-based organizations on the importance of a medical home and the need for care coordination.	Objective 3-3: Educate 90% of physicians and families of CSHCN about innovative ways to link to community organizations, using research-based best practices and lessons learned from mentor homes.	

* The State Medical Home Team provided general oversight of the evaluation

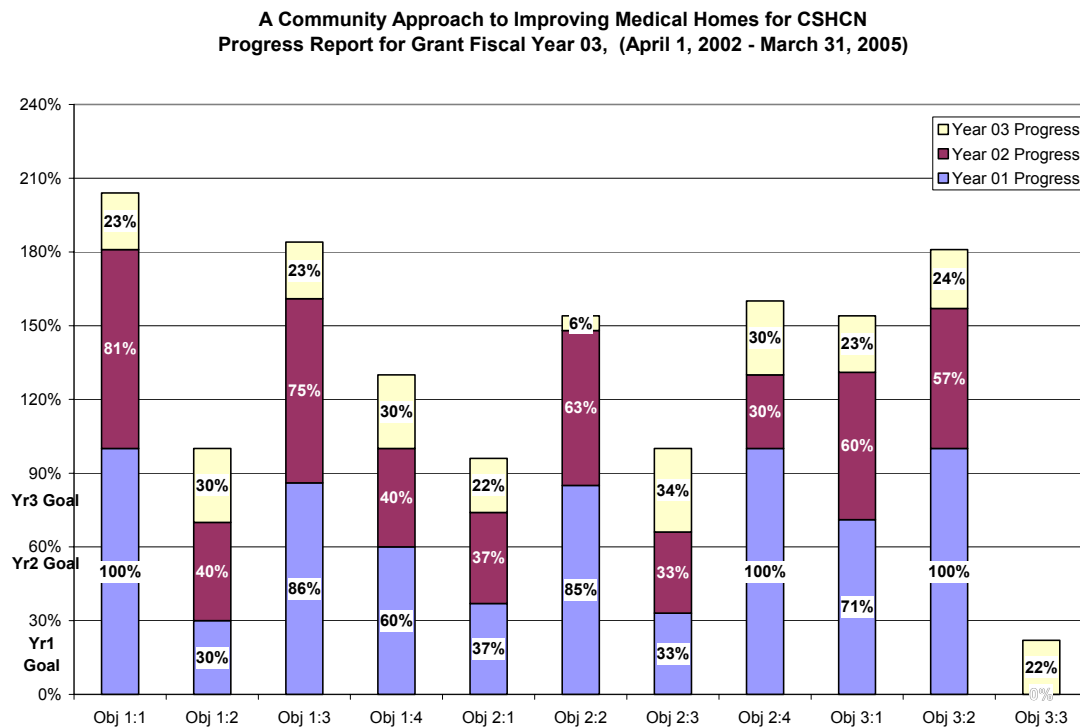
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In keeping with the CMHI evaluation framework, clinical outcomes were examined using Medicaid claims data to determine if the medical home concept impacted the mentor medical home children's health care utilization, specifically, EPSDT visits, hospitalizations and emergency room visits. For clients who use health plans other than Medicaid, a different methodology was employed. For those children, only hospitalizations and emergency room visits were analyzed through the secondary data. For outcome indicators that are not available, such as well child visits and sick child visits, a comprehensive medical record review was conducted on a small sample of children.

Results/Outcomes from Medical Home Project

Partners far exceeded their own expectations for achieving the project's goals and objectives, as demonstrated in the following chart. [Figure 6]

Figure 6

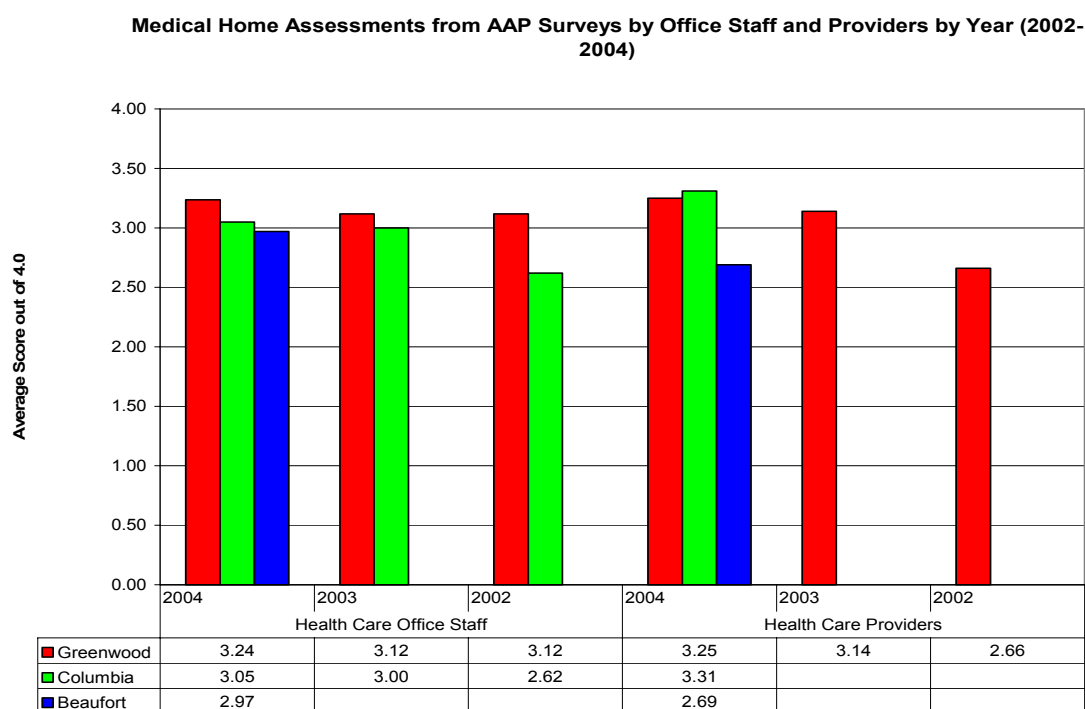


Mentor Medical Home Assessments

In all cases, practices demonstrated improved satisfaction with the medical home from both office staff and providers, as delineated in the chart that follows this paragraph. [Figure 7]

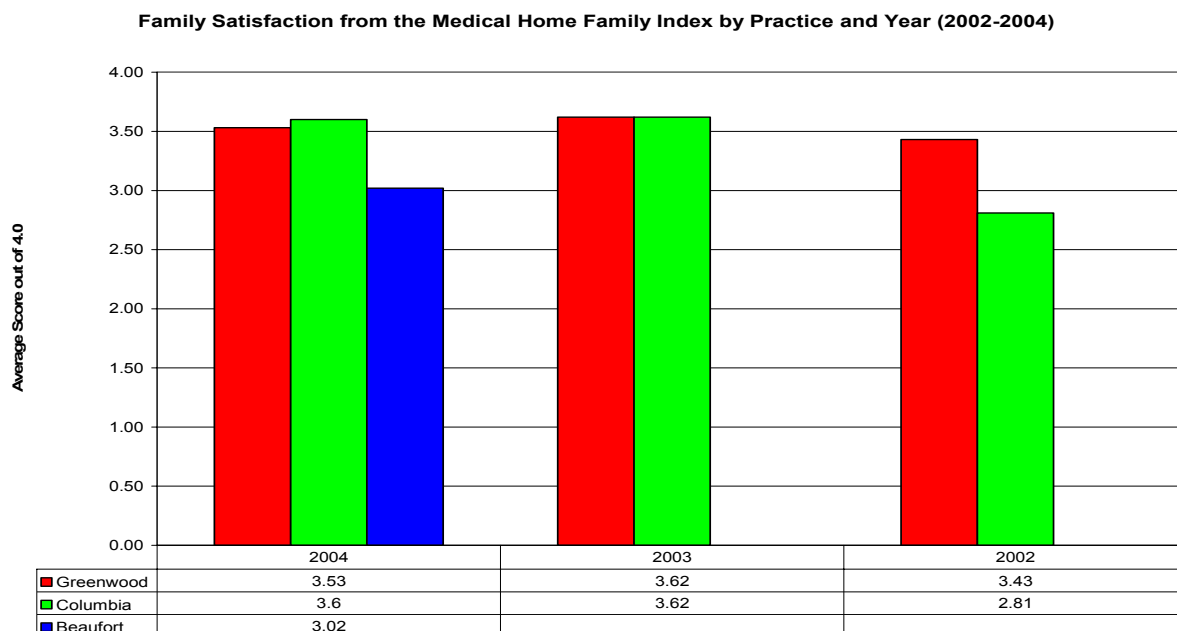
Because of the diverse settings, patient population, provider composition and geography, the results of the practices' assessments should not be compared, even though similar assessment instruments were employed.

Figure 7



Family satisfaction with the mentor medical homes was measured using the Medical Home Family Index, developed by Carl Cooley. The chart below illustrates how family satisfaction increased from the baseline during subsequent intervention years for both Greenwood and Columbia. [Figure 8]

Figure 8



Health Status Outcomes – Greenwood Practice

For the Greenwood practice, the following findings were discovered from the secondary data analysis using Medicaid claims data:

- EPSDT visits significantly improved ($p=0.0309$) after only one year of medical home implementation, based on Fisher's Exact Test. Descriptively, EPSDT visits increased as a result of the medical home intervention.
- Children in the medical home had significantly lower emergency room visits than a comparison group after two years of project implementation (all ER, $p=0.08$ and outpatient ER, $p=0.07$). Descriptively, ER visits decreased after only one year of medical home implementation, although no significant findings were determined until after two years. This is impressive because the practice also serves as a rural residency program

where inexperienced residents take evening and weekend call and have a propensity for sending children to the ER.

- There were no statistically significant findings for inpatient hospitalizations, however, the visit rate and charges declined over time, based on a descriptive analysis.

In addition to these outcomes, the Greenwood practice had no children to roll off of their Medicaid eligibility, in spite of an active re-enrollment process. This is the direct result of having a care coordinator dedicated to ensuring all of the needs of CSHCN are met in the medical home.

For the Columbia practice, the following findings were discovered from a medical record abstraction:

- The average number of annual sick visits decreased from 8.12 during the pre-intervention year to 7.69 after the first year of medical home implementation. This equates to monthly sick visit rates of 1.42 and 1.26, respectively.
- The year before medical home implementation, 75% of the practice's children received an annual well child visit, compared to 95% after the first year of the project.
- Approximately 68% of the practice's children received referrals for care during the pre-intervention year, as compared to 75% after the first medical home year. Additionally, the referral completion rate increased from 88% (pre-intervention year) to 100% (after year 1).

In addition to the medical record abstraction, Uniform Billing data was used to examine inpatient hospitalizations and emergency room visits for the Columbia practice's children. The numbers were too low to be useful statistically. Medicaid data could not be used in the analysis of the Columbia practice due to the low volume of children eligible for Medicaid.

Study Periods

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- Year 01 - Pre-Intervention Year September 1, 2001 through August 31, 2002
- Year 02 - Intervention Year 01 September 1, 2002 through August 31, 2003
- Year 03 - Intervention Year 02 September 1, 2003 through August 31, 2004

Descriptive Analysis

EPSDT visits, inpatient hospitalizations, and emergency room visits all appear to decline over time for the case group and support the hypotheses.

Hypothesis I

To test Hypothesis I, an untreated comparison group design was used. Based on the descriptive analysis, significance testing was only conducted for Emergency Room activities.

The results, using Poisson, at 0.10 significance level, are as follows:

- All Emergency Room visits – the case group has significantly fewer visits in Year 03, with a steady decrease in rate ratio of ER visits for case to comparison.
- Outpatient Emergency Room visits – the case group has significantly fewer visits in Year 01 and Year 03, the pre-intervention year and second intervention year, respectively. This is of concern, as the two groups should not be significantly different at the baseline period. The rate ratio increases from Year 01 to Year 02, and then declines in Year 03 to pre-intervention levels.
- Emergency Room Resulting in Inpatient Hospitalization – the case group has significantly higher hospitalizations than the comparison group at Year 01 (pre-intervention). No further statistical significance was detected, however, the case group

demonstrated a stronger decline in ER to admissions than the comparison group. In other words, ER to admissions were decreased for case group to comparison group levels.

Hypothesis II

A one-group pretest-posttest design was used. Quarters 11 through 12 are difficult to interpret due to a sharp decline in the population size. The results, using Chi Square, Fisher's Exact Test (two-tailed) at 0.10 significance level, are as follows:

- EPSDT – Case group has significantly more visits during Year 02 (Quarters 5, 7, and 8) and the first part of Year 03 (Quarter 9). Inpatient Hospitalizations – Case group has significantly fewer inpatient hospitalizations during Quarters 3, 7, 8, and 9. These time periods represent the latter part of Year 01 (pre-intervention year), the latter part of Year 02 (first intervention year), and the first part of Year 03 (second intervention year). This is of concern, as the case group should not be significantly different at the baseline period.
- All Emergency Room visits – the case group had significantly fewer visits in Quarters 8 and 9, or the latter part of Year 02 and first part of Year 03.
- Outpatient ER visits - the case group had significantly fewer visits in Quarters 8 and 9, or the latter part of Year 02 and first part of Year 03. There was also significant difference at Quarter 2, which is during the baseline period and is of concern, as one would not want to see significant differences here.
- ER Visits Resulting in Inpatient Hospitalizations - the case group had significantly fewer visits in Quarters 8 and 9, or the latter part of Year 02 and first part of Year 03. There was

also significant difference at Quarter 3, which is during the baseline period and is of concern, as one would not want to see significant differences here.

However, the mentor practices did not spread and our Early Intervention program identified only a fraction of the children who had developmental delay or special needs. Therefore, when we applied for the next phase of our Medical Homes program, we defined Children and Youth with Special Health Care Needs more broadly, so we could both attend to the needs of the most vulnerable and identify children with special needs who were not obvious at birth. We have been awarded that grant (The President's New Freedom Initiative: State Implementation Grants For Integrated Community Systems Of Care) and are now building a Medical Homes program to attempt to dramatically expand the number of children, families, and practices we support.

Several years ago, the Early Intervention program (BabyNet) was assessed by the United States Department of Education and was found to be "wanting" in several critical areas:

- Documentation - Needed early intervention services are listed on Individualized Family Service Plans (IFSP) and are initiated within 30 days after the IFSP date.
- Child Find - The number of children eligible for BabyNet with Initial Individualized Family Service Plan (IFSP) has been very much less than predicted. The number of identified children must be increased toward the projected goals.
- Over 45 Days - Number of children without initial IFSP within 45 calendar days from initial referral has been too low. BabyNet is required to evaluate each child referred to BabyNet in five developmental areas (cognitive, physical development including vision and hearing, communication development, social emotional development, and adaptive development) within 45 calendar days from the day the child is referred and prior to the child's Initial Individualized Family Service Plan (IFSP). To date, we have only been

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conducting evaluations on these children in the area of concern that resulted in the referral (i.e., speech only for a child with speech delay).

- Transition Referral - Document that transition planning is being incorporated into the child's IFSP that is completed closest to the child's second birthday, and that children have a transition conference at least 90 prior to the child's third birthday.
- Family Directed - Ensure that a family-directed identification of the needs of each child's family is included in our assessment process, to appropriately assist in the development of the child.

At the time of the evaluation by the Department of Education, the interagency collaboration was deeply divided and children were not being identified nor served well. A South Carolina MCH Bureau transition team was appointed, and the Systems Point of Entry process was stopped to be repaired. The community Quality Counsel was revitalized, followed by a great deal of outreach to our partners in the community; including the South Carolina Department of Education, the Department of Disabilities and Special Needs, the South Carolina School for Deaf and Blind, the Department of Mental Health, and TECS (Team for Early Childhood Solutions) the technical support organization from the University of South Carolina Department of Pediatrics. This immense effort demonstrates that we are dedicated to attend to the concerns and needs of our sister agencies and the private providers in the community, to better serve our patients and their families. The revitalization of the interagency collaboration was manifest both by the reactivation of the finance committee and the creation of a Continuous Quality Improvement oversight group to monitor progress and to measure performance.

We obtained a "Closing the Gap" grant to attend to infant mortality disparities prevention in one of the poorest areas in the state, which entailed partnering with the district health

department, the hospitals in the area, local physicians, and the Healthy Start organization.

Closing the gap Grant will focus on:

- Enhanced education for pregnant women,
- Provider education and partnership,
- Community and consumer awareness, and
- Enhanced Fetal Infant Mortality Review.

This funded project has just been introduced into the community.

The leadership of the MCH Bureau and the Chronic Disease Prevention and Health Promotion Bureau changed over the course of this first year of the needs assessment. The two new leaders of the bureaus met soon after their appointments, and agreed that our work crossed boundaries in many areas, which gave us the opportunity to collaborate much more closely than we had in the past. We then jointly applied for a Merck grant to attend to needs of our children with asthma, their families and communities, with primary, secondary, and tertiary prevention programs, which we cited in the application. We pledged to work together on this thorny problem and to expand to other problems where we share responsibility, no matter what the outcome of this grant application.

Some years ago, the agency recognized that the South Carolina Immunization Registry was built on a software program that was overextended and very vulnerable. The DHEC Agency was forced to recognize it would ultimately have to abandon this system and began working to create a better system that would form the basis of a newly emerging information architecture called Client Automated Record and Encounter System (CARES). During this time, the MCH Bureau recognized the severe limitations of our own registries, like newborn metabolic screening, newborn hearing screening, and the nonexistence of a developmental screening surveillance tool.

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Coincidentally, our Vital Records department had embarked on an ambitious program to expand a web based Vital Record system. The opportunity for synergy became apparent, as we embarked on a program to unite these databases through a Master Client Index. All of these activities are now in development and an integrated system for client records will be soon be available to all users, within the framework of the Health Insurance Portability and Accountability Act (HIPAA).

At the heart of such complex collaborative efforts must be an integrated data system to assess and analyze the needs of the population. In South Carolina, we are most fortunate to have an Office of Research and Statistics, part of the South Carolina Budget and Control Board, which has created an integrated data warehouse with linked information from housing, education, juvenile justice, environmental exposures, all hospital medical records, vital records, Medicaid data, etc. This rich data source must be analyzed so the warehouse data can be used to help us better define our at risk populations, so we can craft targeted programs. This will help us use our limited resources in the best, most efficient way. The collaborative group met in early June 2005 to formulate an approach to analyzing the data. The group intends to use emerging mathematical and epidemiologic models to attend to multiply interactive predictor variables, as we assess the causes of disparities in infant mortality, etcetera. We brought together this group, Paradigms Creations, which includes our vital records bureau leadership, the head of the National Oceanic and Atmospheric Administration, the founders of the University of California at Los Angeles' Center for Healthier Children, Families, and Communities, analysts from the Rand Corporation, many members of the University of South Carolina's Arnold School of Public Health, Division of Epidemiology, the director of the MCH Bureau and others. It is our hope that the Office of Research and Statistics and the division of epidemiology at the University will "house" this

project, though the vision and early organization of Paradigm Creations came from the SC MCH Bureau.

The most frustrating and difficult part of this process involves our inability to assess capacity -- both internal and external. Our own capacity has been shrinking over the last five years and is under tremendous pressure with further plans by the Medicaid agency to reduce and significantly alter their support of our programs. We hope that one important product of this five-year strengths and needs assessment will be a better understanding and method of tracking both internal and external capacity, to better utilize limited resources.

Members of these many joint programs are working together to strengthen the assets within all participating groups. Even though much work is involved to keep the collaboratives active and productive, the leadership of the Bureau recognizes the immense opportunity and strength, which result from such efforts. The Bureau cannot effectively work alone, but must partner to achieve its mission for South Carolina and its citizens.

Assessment of Needs of the MCH Population Groups

The following paragraphs describe the health status of the State MCH population, broken down into the three main sub-populations of (1) pregnant women and infants; (2) children; and (3) children with special health care needs. The Healthy People 2010 Objectives related to these populations provide a structure for this description, as do the Title V Health Status Indicators and Health Systems Capacity Indicators.

Population Statistics

According to the 2003 population estimates, South Carolina's population in 2003 was 4,147,153 persons. This represents a 14.3% increase over the population estimate of 3,629,545

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in 1993. In 2003, the South Carolina population included 884,115 women of childbearing age (15-44), who made up 21.35% of the overall population, including 20.1% of the white population, 23.6% of the black population, and 26% of the “Other” population. [Figure 9]

Figure 9 - 2003 South Carolina Population Distribution by Race and Age Group

	Total	White		Black		Other	
		Number	Percent	Number	Percent	Number	Percent
Total	4,147,153	2,823,653	68.1%	1,257,443	30.3%	66,057	1.6%
Male	2,018,593	1,396,509	33.7%	589,760	14.2%	32,324	0.7%
Female	2,128,560	1,427,144	34.4%	667,683	16.1%	33,733	0.8%
Females age 15-44	884,115	569,267	13.7%	297,652	7.2%	17,196	0.4%
<5 years	277,113	172,842	4.1%	99,799	2.4%	4,472	0.1%
5-14 Years	572,941	349,397	8.4%	214,808	5.2%	8,736	0.2%
15-24 Years	600,304	372,927	8.9%	216,653	5.2%	10,724	0.26%

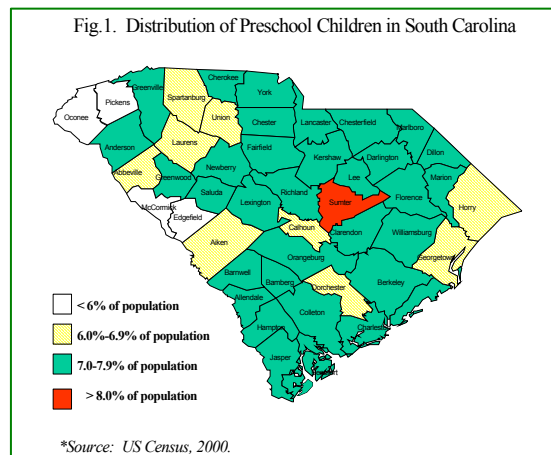
Source: US Census and Current Population Survey

South Carolina had approximately 1.45 million children and young adults between the ages of 0 and 24. By 2003 population estimates, 62% of them were white, 36% were Black, 1.7% were other ethnicities, which included Asian, Hispanic and other groups.

Geography

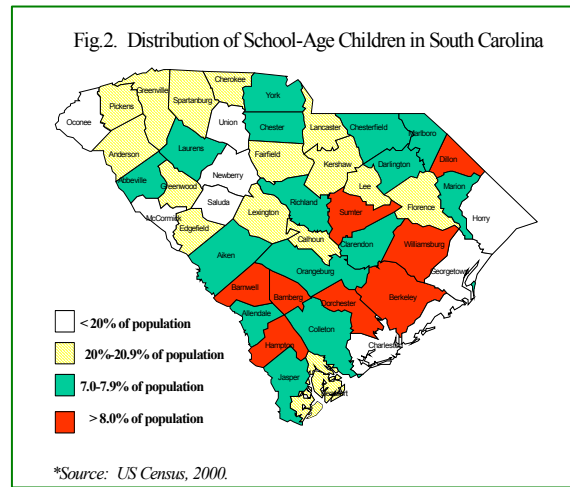
Children under age 5 comprise about 6.7% of the total population of the state. Children age 5-19 comprise 20% of the population. Geographical distribution of children 5.2% to 8.0% of total county population, with McCormick County having the lowest percent and Sumter County having the highest. The highest number of preschool children is found in Greenville County with just over 26,700 preschoolers, and the smallest number found in McCormick County with just under 500. [Figure 10]

Figure 10



According to 2003 population estimates, school age children comprise from 16% to 23% of the total county populations, with McCormick County having the smallest proportion and Berkeley County having the largest proportion. The largest number of school-age children is found in Greenville County. [Figure 11]

Figure 11



Poverty Issues

Income is a significant factor in quality of life for women. It impacts access to health care, food security, and a host of other lifestyle issues. Figure 12 shows the proportion of all racial and ethnic groups in South Carolina who are low-income or poor by federal poverty standards. Since women comprise at least half of all these population groups, a significant proportion of women in the State are low-income or poor. Poverty is a significant risk factor for poor health outcomes in children. Poverty is often an underlying cause of poor health due to poor access to health care, chronic stress, poor nutritional status and often substandard and unhealthy housing.

Figure 12

Fig.3. South Carolina Residents Who Are Low-Income And/Or Poor, By Race And Ethnicity, 2000*

	PERCENT POOR (<FPL)	PERCENT LOW-INCOME (<200% FPL)
White, Non-Hispanic	8.2	23.6
Asian/Pacific Islander	11.8	27.0
ALL RACES/ETHNICITIES	12.5	31.1
Black, Non-Hispanic	24.4	48.4
Hispanic, All Races	22.5	52.6

*Source: US Census, 2000.

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Figure 13 below describes the population of children and adults in terms of age group and standing with respect to federal poverty levels.

Figure 13 – 2002 Percent of South Carolina Residents by Age Group and Poverty Status								
<i>Age Group</i>	<i>Below 100% of Poverty</i>				<i>Below 200% of Poverty</i>			
	All	White	Black	Hispanic	All	White	Black	Hispanic
Total	12.5	8	24	23	31	24	48.4	52.6
Male	11.2	7	22	21	29	21	44.7	50.8
Female	13.7	9	27	24.4	33	26	51.5	54.5
Female Head of Household	30	21.1	39	38.4	56.7	44.8	67.7	69.7
<5 years	17.6	11.5	39.1	32.4	42.6	29.4	65.1	66.2
5-18Years	20.3	9.2	32.1	28.5	37.8	25.4	39.9	61.5

Source US Census and Current Population Survey

Figure 14 shows a graphical representation of the same information indicating a much higher proportion of African American children live in poverty than white children.

As of the 2003 Annual Demographic Survey, more than one in ten (12.5%) South Carolinians live in poverty, including 17.6% of children less than 5, and 20.3% of school-age children. African American and Hispanic children are at least three times more likely to live in poverty than white children.

Access to Health Care

2000 Census data shows that about 15% of South Carolina women and 12.6% of women nationally did not have health insurance. In 2002, almost half (42.9%) of deliveries in South Carolina were paid by Medicaid, with well over half (61.5%) being black infants. More than

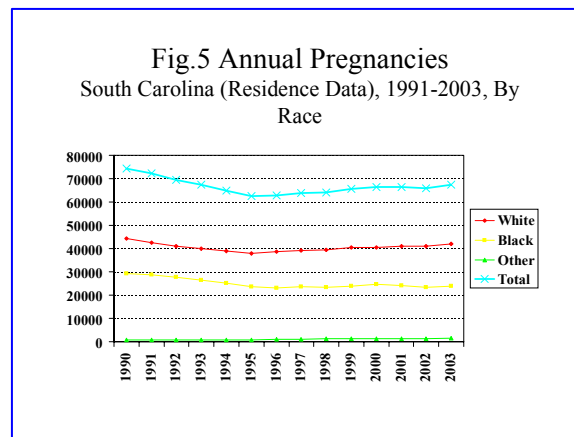
twice as many black infants as white infants' deliveries were paid for by Medicaid. In Region IV, Medicaid paid 40.7%, with 29.5% for white infants and 57.1% for black infants.

Women of Childbearing Age and Infants - Morbidity

Pregnancies and Births

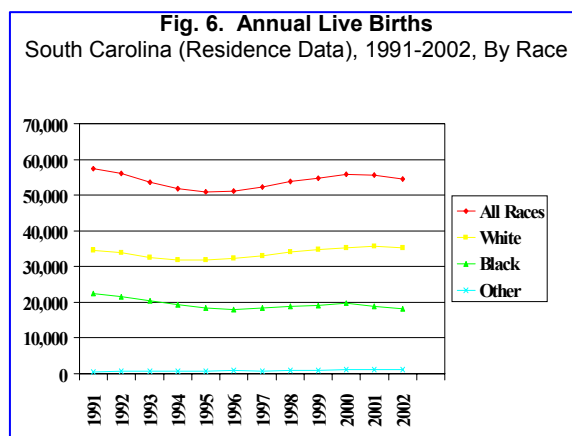
South Carolina women had 65,923 pregnancies in 2002. The pregnancy rate was 72.9 per 1,000 reproductive age women while the pregnancy rate for Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee) was 79.9/1,000. The pregnancy rate in South Carolina decreased by 5.7% from 1993 to 2002, with 15.9% decrease in black women and slight increase of 0.9% in white women. [Figure 15]

Figure 15



There were a total of 54,431 live births born to South Carolina residents, 35,136 to white mothers, 18,144 to black mothers and 1,151 to other racial groups. [Figure 16] The fertility rate was 60.4 per 1,000 women, compared to 63.4 for Region IV in 2002. The overall fertility rate decreased 2.4% in the ten-year period, while the black fertility rate decreased 15.7% and the white fertility rate increased 6.3%.

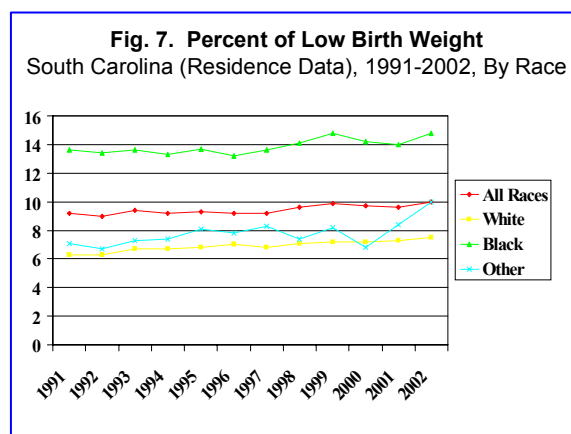
Figure 16



Low Birth Weight Infants

The overall proportion of infants born at low and very low birth weights, regardless of their survival outcomes, provides another measure against which to evaluate infant health status. South Carolina has experienced a slightly increasing trend in low weight birth rates over the past several years. [Figure 17] In 1992, 9.0% of all live births weighed less than 2500 grams and by 2002 the percentage had increased to 10%. The HP 2010 Objective 16-10a identifies an overall low birth weight target of no more than 5% of live births. Our current trend does not appear to be approaching this goal. Reduction of racial disparities in low birth weight represents a clear need; the black and other rate has remained twice that of the white rate consistently through the past decade.

Figure 17



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The percent of white infants with low birth weight increased from 6.7 to 7.5, while black infants increased from 13.4 to 14.8. Black infants are almost twice as likely to have low birth weight as white infants. South Carolina low birth weight rate for infants with birth weight less than 2,500 grams in 2002 is higher than the Region IV percent of 9.1 and the national average of 7.7.

A trend that parallels the one for low weight births can be observed for infants born at very low weights (1500 grams). In 1992, 1.8% of all live births and 1.5% of all live singleton births weighed less than 1500 grams at birth. By 2002, 2% of all live births, including 1.3% of white births and 3.2% of births to black mothers were born in this weight category. If we are to come close to attaining the HP 2010 Objective of no more than 0.9% of infants born at very low weights, we will need to see improvements beyond the trends observable now. Reducing racial disparities in very low birth weight should contribute substantially to this end. The rate for black and other infants has consistently been 2.5 times that of the white rate through the 1990s, and has shown a slight tendency toward an even greater disparity in recent years.

South Carolina very low birth weight rate for infants with birth weight less than 1,500 grams in 2002 is higher than the Region IV percent of 1.8 and the national average of 1.5. The percent of infants with shorter gestational age less than 37 weeks increased from 10.0% in 1993 to 12.1% in 2002, especially infants with 32-36 gestation weeks increased from 7.6% to 9.7% in the ten-year period.

Particularly noteworthy is the increasing proportion in recent years of live born infants weighing less than 500 grams. Because less than 1% of infants born in this extremely low weight range survive the early neonatal period, such births have been seen as essentially non-viable.

This increasing proportion of extremely low weight births, seen nationwide as well as in South Carolina, most likely represents a shift in physicians' perception of viability resulting from increasingly sophisticated technologies for providing life support to these most fragile of all infants.

Congenital Malformations

The overall congenital malformation rate did not change significantly, from 18.0 per 1,000 live births in 1993 to 17.6 in 2002. White infants with congenital malformations dropped from 15.4 per 1,000 in 1993 to 14.3 in 2002; however, black infants increased from 22.4 per 1,000 in 1993 to 23.7 in 2002. We are nowhere near reaching the Healthy People 2010 Objective 16-1f of reducing all birth defects to 1.1 per 1,000 live births.

The overall rate of newborn spina bifida was reduced by 50% from 0.4 per 1,000 live births in 1993 to 0.2 in 2002. The white infant rate was reduced by 75% from 0.4 in 1993 to 0.1 in 2002, and the black infant rate was 0.3 in 1993 with the lowest rates of 0.1 in 1995, 1996, 1998, 1999 and 2000. (Healthy People 2010 Objective 16-15: reduce the occurrence of spinal bifida and other neural tube defect to 3 new cases per 10,000 live births). We are very close to reaching the HP 2010 goal. Aggressive efforts in education and awareness with respect to folic acid supplementation for pregnant women have been underway for the past 10 years.

The overall rate of infants with heart malformations dropped from 2.1 per 1,000 live births in 1993 to 1.6 in 2002. The white infant rate was 2.0 in 1993 and 1.6 in 2002 and the black infant rate decreased from 2.4 in 1993 to 1.4 in 2002. (Healthy People 2010 Objective 16-1g: reduce congenital heart defects to 0.38/1,000 live births).

Women of Childbearing Age and Infants - Mortality

Leading Causes of Death in Women

The total mortality rate for reproductive age women has been quite stable at 1.1 – 1.2 per 1,000 population in the last ten-year period from 1993 to 2003. The top five leading causes of deaths are: accidents, cancer, heart diseases, AIDS and homicide. [Figure 18]

Figure 18 - South Carolina 2003 Top Five Leading Causes of Death in Women of Childbearing Age				
Cause of Death	Total*	White*	Black*	Black/White Disparity
Unintentional Injuries	27.3	32.3	19.1	0.6
Cancer	21.7	19.1	27.2	1.4
Heart Disease	13.2	8.8	22.5	2.6
AIDS	7.1	1.8	17.5	9.7
Homicide	5.2	3.5	8.7	2.5
<i>*Mortality Rate (per 100,000)</i>				

Black women are 60% less likely to die of the most common cause of death, which is unintentional injuries. However, they were 40% more likely to die of cancer, 2.5 times more likely to die of heart disease or homicide and almost ten times more likely to die of AIDS than white women.

Maternal Mortality

There were three deaths related to pregnancies in 2002, including two white women and one black woman.

Infant Mortality

The top five leading causes of infant deaths in the ten-year period are: congenital malformations, disorders related short gestation and low birth weight, sudden infant death syndrome (SIDS), newborn affected by maternal complications and respiratory distress syndrome (RDS). [Figure 19]

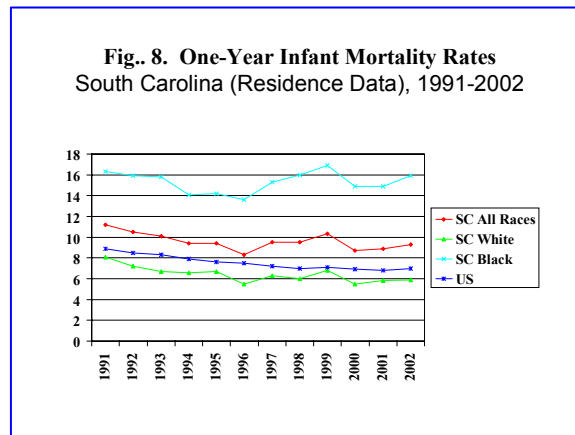
Figure 19 - Top Three Leading Causes of Death in Infants				
Cause of Death	Race	1993	2002	% Change
Congenital malformations	Total	204.8	141.4	-31.0%
	White	181.1	110.9	-38.8%
	Black	248.9	198.3	-20.3%
	Disparity	1.4	1.8	30.1%
Disorders related to short gestation and low birth weight	Total	145.2	132.2	-9.0%
	White	73.7	54.1	-26.6%
	Black	258.6	275.5	6.5%
	Disparity	3.5	5.1	45.1%
Sudden Infant death syndrome	Total	103.3	67.9	-34.3%
	White	101.3	62.6	-38.2%
	Black	175.7	77.1	-56.1%
	Disparity	1.7	1.2	-29.0%
*Mortality Rate (per 100,000 Live Births)				

Deaths from congenital malformations decreased 31% overall in the past 10 years. The white rate decreased almost 40% and the black rate decreased 20%. However, the black/white disparity increased 30% from 1.4 to 1.8. Disorders related to low birth weight and short gestation decreased almost 10-% overall, and more than 25% in white infants. However, in this same time

period, the black rate actually increased by 65%. In this period of time the black/white disparity increased by 45%. More significant improvements were seen in SIDS deaths, which dropped by almost 35% overall. Deaths in black infants dropped by 56%, and the disparity in SIDS deaths decreased by almost a third, from 1.7 to 1.2.

The white infant mortality rate had an overall decrease of 11.9%, from 6.7 in 1993 to 5.9 in 2002 with the lowest rate of 5.5 in 1996 and highest rate of 6.8 in 1999. The black infant mortality rate was 15.4 in 1993 and decreased to 13.0 in 1996, which is the lowest black infant mortality rate in the ten-year period, then began going up to 16.9 in 1999. The black infant mortality rate in the last three years (2000, 2001, and 2002) was 14.9, 14.9 and 15.9, respectively. [Figure 20]

Figure 20



Among 54,431 live births in 2002, 507 infants died including 208 white infants, 288 black infants and 11 infants in other racial groups. The 2002 South Carolina total infant mortality rate (9.3/1000) is higher than the Region IV rate of 8.4 and the US rate of 7.0 per 1,000 infants. The South Carolina white infant mortality rate (5.9/1,000) is lower than the 2002 Region IV rate of

6.2 and a slight higher than the 2002 US rate of 5.8. The South Carolina black infant mortality rate is 15.9, higher than the Region IV rate of 14.7 and the US rate of 14.3. The ratio of black-white infant mortality rate is 2.7 in 2002, which means that the relative risk of black infant deaths is 2.7 times of it for white infants. (Healthy People 2010 Objective 16-1c: reduce all infant deaths within 1 year to 4.5/1,000 live births).

The 2003 data for infant mortality show that in 2003, out of 55,461 live births, 475 babies died before their first birthday, compared to 495 in 2002.

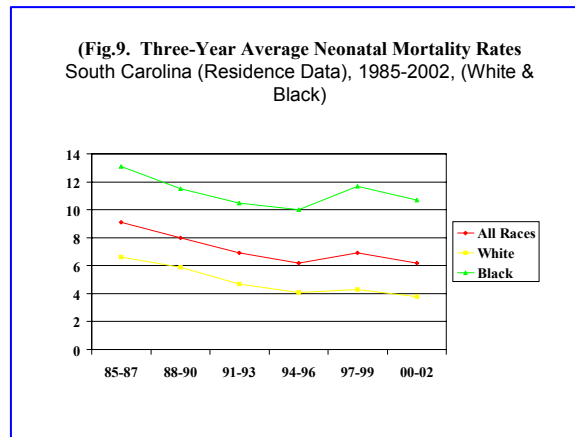
The 2003 infant mortality rate of 8.3 infant deaths per 1,000 live births represents a 10.8 percent decrease from last year's rate of 9.3. This is due in large part to a 15.6 percent decrease of infant death in the 'Black and Other' category, which is down from 15.4 per 1,000 live births in 2002 to 13.0 in 2003.

Neonatal

Most of the difficulty in accomplishing further reductions over the past several years in infant mortality can be attributed to persistence in the neonatal mortality rates. The black and other rate in particular remained unchanged through the first half of the decade, varying only slightly around an average of 10.3 deaths per 1,000 live births. By 1999, this rate had increased to 12.4, but decreased to 11.2 in 2002, showing some improvement. By contrast, the white neonatal mortality rate improved over the decade from a high of 5.6 in 1990 to a low of 3.8 in 2002. This 32% reduction over the 12-year period will contribute significantly to efforts to attaining the HP 2010 Objective of 2.9 neonatal deaths. Reducing racial disparities in neonatal deaths appears to be the key to reducing the statewide infant mortality rate: in 1990, black and other infants had

2.0 times the risk of death as white infants, and by 2002 this risk had increased to 2.9. [Figure 21]

Figure 21



There were a total of 346 infant deaths occurred before 28 days after birth in 2002, including 134 white infants and 204 black infants. The 2002 total neonatal mortality rate (6.4/1,000) is higher than the Region IV rate of 5.5 and the US rate of 4.7. The 2002 white neonatal mortality rate (3.8/1,000) is lower than the Region IV rate of 4.0 and the US rate of 3.9. However, the 2002 black neonatal mortality rate (11.2/1,000) is higher than the Region IV rate of 10.0 and the US rate of 9.4. (Healthy People 2010 Objective 16-1d: reduce neonatal deaths within the first 28 days of life to 2.9/1,000 live births).

Neonatal death rate, which includes deaths that occur up to 28 days after birth, dropped from 6.4 in 2002 to 5.9 per 1,000 live births in 2003. The post neonatal rate, which includes deaths that occur from 28 days after birth to 1 year of life, decreased as well, from 3.0 in 2002 to 2.4 per 1,000 live births in 2003. The decrease meant a 20 percent drop in the death rate in the post-neonatal group of infants.

With respect to underlying causes of neonatal deaths, racial differences provide important clues about where to focus prevention efforts. Deaths associated with adverse maternal conditions (e.g., maternal complications or pregnancy, pre-existing maternal health conditions, complications of pregnancy, labor, and delivery) increased significantly for black and other infants, but not so for white infants. Deaths associated with very low birth weight and prematurity show clear racial differences. Some infants who are born at very low birth weights die from specific causes that are not directly attributable to prematurity and low birth weight per se. Deaths due to injuries or to fatal congenital anomalies provide representative examples. When deaths of very low birth weight infants that are directly attributable to causes unrelated to prematurity are excluded, we see substantial improvements in very low birth weight death rates for both races across the decade. However, the rates for black and other infants are consistently higher than those for whites and the disparities have become more pronounced.

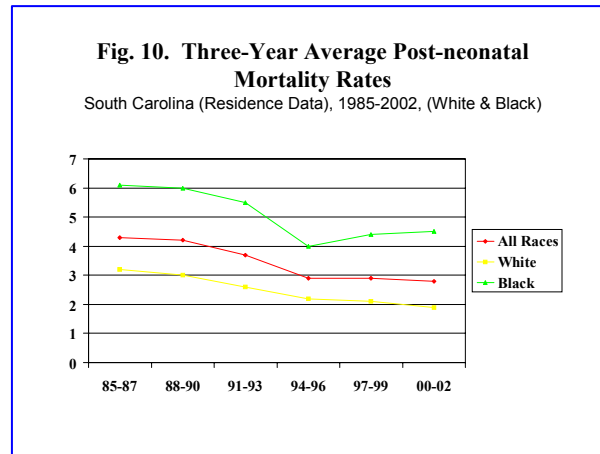
Post neonatal

Significant improvements in South Carolina's post neonatal mortality rate occurred during the past decade. The maximum difference in the rate for black and other infants occurred between 1991 and 1996, with the rate for 1996 being 66% lower than that for 1991. The maximum difference in rates for white infants occurred between 1991 and 1997, where the 1997 rate was 44% lower than that for 1991. For all races combined, the rate decreased by 35% over the time period 1990 - 1998.

South Carolina post neonatal mortality rate (28 to 364 days after births) was 3.3 per 1,000 births in 1993 and 3.0 in 2002, with the lowest rate of 2.7 in 1996-1997, representing a decreasing by 9.0%. The trend of white post neonatal mortality rate indicates a 8.7% decrease from 2.3 in 1993 to 2.1 in 2002, with the lowest rate of 1.6 in 2000. Black post neonatal

mortality rate was 4.8 in 1993, dropped to the lowest rate of 3.7 in 1996 and stayed around 4.5 – 4.6 in 1999 to 2002. [Figure 22]

Figure 22



In 2002, there were a total of 161 post neonatal deaths, including 74 white post neonatal deaths and 84 black post neonatal deaths. The 2002 total post neonatal mortality rate (3.0/1,000) is higher than the Region IV rate of 2.9 and the US rate of 2.3. The 2002 white post neonatal mortality rate (2.1/1,000) is lower than the Region IV rate of 2.3 and higher than the US rate of 1.9. The 2002 black post neonatal mortality rate (4.6/1,000) is lower than the Region IV rate of 4.7 and the US rate of 4.9. (Health People 2010 Objective 16-1e: reduce post neonatal deaths between 28 days and 1 year of life to 1.2/1,000 live births).

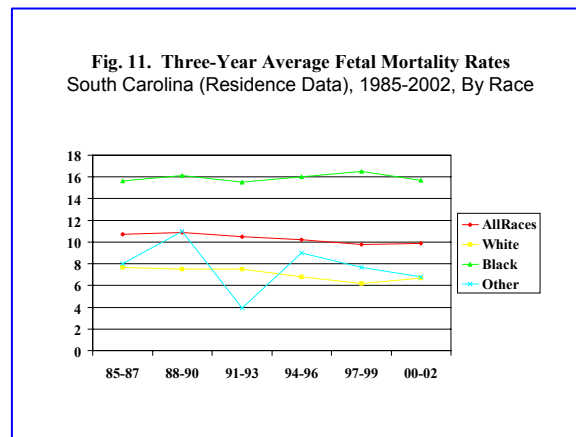
Much of the improvement in post neonatal mortality in South Carolina can be attributed to significant reductions in deaths due to Sudden Infant Death Syndrome (SIDS). The declining mortality rate was most pronounced for black and other infants, and coincided in time with our public health educational "Back to Sleep" initiative in which mothers were advised that putting infants to sleep on their backs has been shown to reduce the risk of SIDS.

Fetal Mortality

South Carolina fetal deaths decreased by 12.0% from 10.8 per 1,000 live births in 1993 to 9.5 in 2002. There were approximately the same decreases of 8.0% for both white and black fetal deaths in the ten-year period. (Health People 2010 Objective 16-1a: reduce fetal deaths at 20 or more weeks of gestation to 4.1/1,000 live births plus fetal deaths).

There were a total of 523 fetal deaths in 2002, including 243 white and 272 black fetal deaths. The black-white ratio in fetal deaths is 2.1, while comparing the black fetal death rate of 14.8 per 1,000 live births and white fetal death rate of 6.9 per 1,000 live births. [Figure 23] South Carolina fetal death rate is higher than Region IV 2002 fetal death rate (7.3/1,000 live births) and the 2002 national average fetal death rate (6.5/1,000 live births).

Figure 23



Prenatal and Risk-Appropriate Care

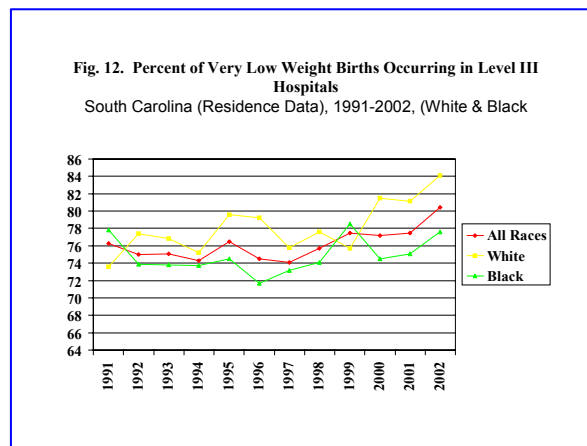
Risk appropriate care is indexed in the Title V Federal Performance Measures as the percent of very low weight infants delivered at facilities for high-risk deliveries of neonates. Analyses of

South Carolina's regionalized model of service delivery for high-risk pregnancies have demonstrated its efficacy in providing tertiary-level care to prevent infant deaths.

VLBW in LIII Hospitals

The percent of infants with very low birth weight delivered at level III hospitals slightly improved in the ten-year period, from 70.9% in 1993 to 73.7% in 2002, 70.5% to 73.7% and 71.0% to 73.5% for white infants and black infants, respectively. [Figure 24] (Healthy People 2010 Objective 16-8: increase the proportion of very low birth weight infants born at level III hospitals or subspecialty perinatal centers to 90%).

Figure 24

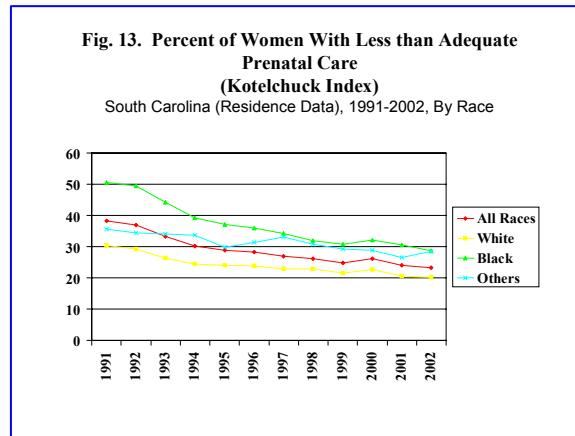


Kotelchuck

Efforts to prevent the likelihood of pre-term very low-weight births relate to promoting early, risk appropriate prenatal care. South Carolina is making good progress toward the HP 2010 goal of increasing to at least 90% the proportion of all pregnant women who receive prenatal care in the first trimester. In 2002, 73.3% of all new mothers received prenatal care in the first trimester.

In that year, 79.7% of all white mothers and 70.3% of all black and others mothers had early care. [Figure 25]

Figure 25

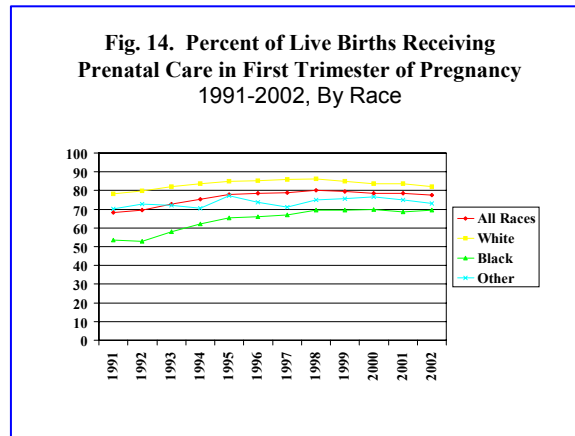


Public and private sector health care providers agree that there is a mal-distribution of providers in rural areas. There are problems associated with the concentration of obstetrical providers in the urban areas that leave shortages in the rural areas, with large segments of the childbearing population without adequate transportation, and with the supply of perinatal providers falling far short of the demand for their services.

The total percent of pregnant woman received prenatal care starting after the first trimester was 24.6% in 1993, with the lowest percent of 17.2 in 1998, and 20.6% in 2002, compared to the Region IV 2002 rate of 14.8% and US 2002 rate of 15.0%. In the ten-year period, the percent of white pregnant woman received prenatal care after the first trimester reduced from 16.7% in 1993 to 11.9% in 1997 and climbed up to 16.6% in 2002. [Figure 26] The Region IV 2002 rate for white woman is 12.1% and the US rate is 13.5%. Although black pregnant women have continuously decreasing trend of receiving prenatal care after the first trimester, from 36.9% in 1993 to 28.0% in 2002, the percent is still much higher than it for SC white women, the Region

IV percent of 21.9%, and the national average of 22.1% for black woman. (Healthy People 2010 Objective 16-6a: increase the proportion of pregnant women who receive early and adequate prenatal care beginning in the first trimester of pregnancy to 90%).

Figure 26



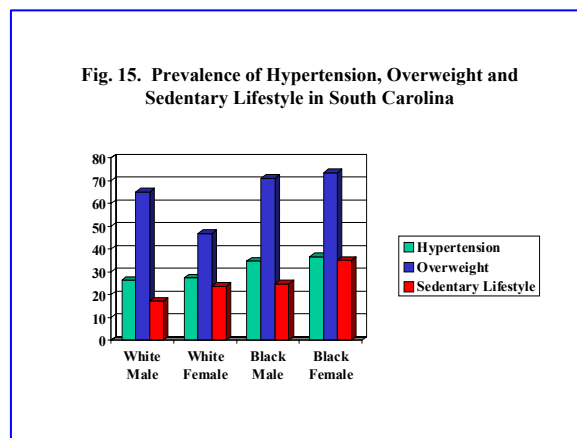
Women's Health Issues

Obesity

Nutrition is a critical health issue for South Carolina's women. Nutritional status can significantly affect pregnancy outcomes either positively or negatively. More than 70% of black women are overweight and 30% are reported to be obese. For white females almost 50% are overweight.

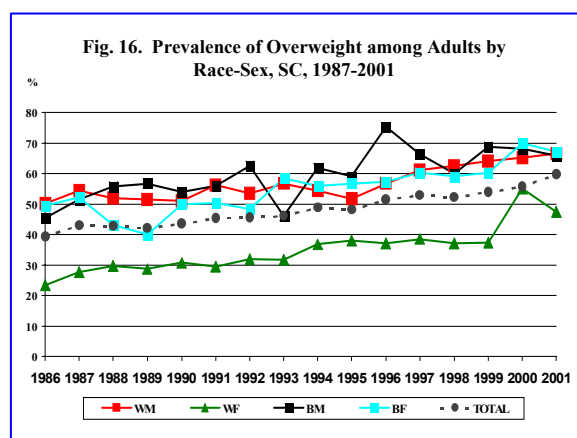
The results of the BRFSS for sedentary lifestyles and hypertension showed similar results. Almost 35% of black females were reported to have a sedentary lifestyle, and 25% of white females. [Figure 27] The prevalence of hypertension in black women is about 36%, and for white women the prevalence is 27.5%. This can have serious consequences for pregnancy outcomes.

Figure 27



The prevalence of obesity among women more than 18 years of age in South Carolina increased by 26.4% from 39.8% in 1993 to 50.3% in 2002, while the prevalence in the Region IV changed from 40.1% to 50.1%. BRFSS data estimated that the obesity prevalence in white females increased by 33.4% from 32.9% to 43.9% in the ten-year period, and 59.1% to 65.4% in black females. [Figure 28]

Figure 28



Hypertension

South Carolina Birth Certificate data indicated that live births to mothers with chronic hypertension increased from 9.0 in 1993 to 12.7 per 1,000 infants in 2002, 6.5 to 9.7 for white infants and 13.2 to 19.1 for black infants. Live births to mothers with pregnancy associated hypertension increased from 33.8 to 44.3 in the ten-year period, 35.4 to 44.6 for white infants and 31.9 to 44.5 for black infants.

Anemia

The rate of live births to mothers with anemia increased from 0.5 per 1,000 live births in 1993 to 0.9 in 2002, while the rate for white live births increased from 0.5 to 0.8 and black live births increased from 0.7 to 0.9. The rate of live births with anemia increased from 21.7 per 1,000 live births in 1993 to 25.7 in 2002, while white live births increased from 12.2 to 17.4 and black live births increased from 37.0 to 41.2.

Stress

BRFSS survey data estimated that perceived stress among South Carolina females decreased from 27.8 in 1993 to 23.9 per 1,000 in 2002. Black women had higher prevalence of perceived stress than in white women, 33.9 for black women compared to 18.3 for white women.

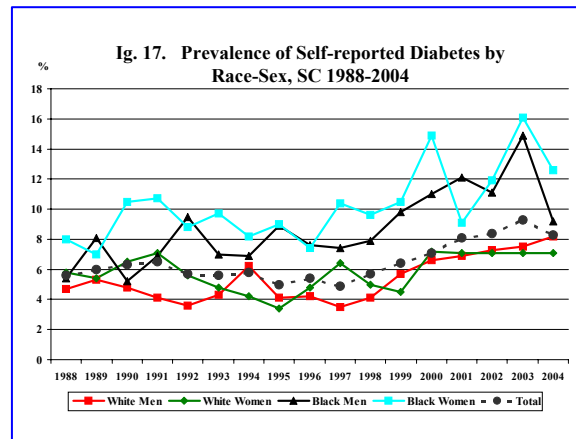
Diabetes

BRFSS survey data estimated that diabetes prevalence increased by 37.7% from 6.1 in 1993 to 8.4 per 1,000 females, while the national average was 6.7 in 2002. [Figure 29] South Carolina

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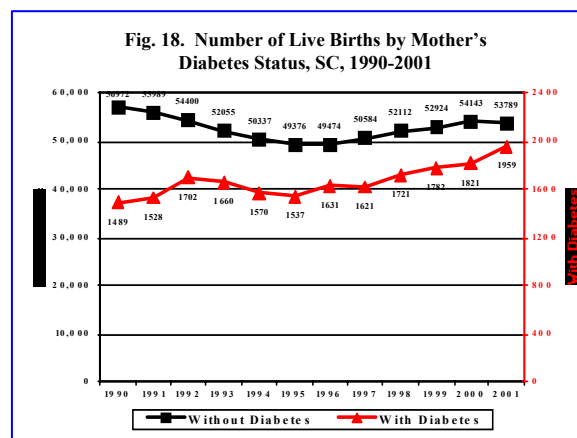
Birth Certificate data indicated that live births born to mothers with chronic diabetes increased by 28.8% from 30.9 in 1993 to 39.8 per 1,000 in 2002. Live births to black mothers with chronic diabetes increased more rapidly than births to white mothers, 51.9% increase from 29.3 to 44.5 per 1,000 black infants compared to 15.8% increase from 31.7 to 36.7 per 1,000 white infants.

Figure 29



The rate of live births to mothers with chronic diabetes increased 28.8% from 30.9 per 1,000 live births in 1993 to 39.8 in 2002. The rate of live births to white mothers with chronic diabetes increased 15.8% from 31.7 in 1993 to 36.7 in 2002. The rate of live births to black mothers with diabetes increased 51.9% from 29.3 in 1993 to 44.5 in 2002. [Figure 30]

Figure 30



Smoking

BRFSS 2002 survey data estimated 27.7% of white women, 15.0% of black women and a total of 24.2% of South Carolina women smoked in 2002, which is slight higher than the Region IV prevalence rate of 22.3% and the U.S. rate of 20.8%. Data from South Carolina Birth Certificate indicated that 13.0% of total women, 25.9% of white women and 7.5% of black women reported as smokers. (Healthy People 2010 Objective 16-17c: increase abstinence from cigarette smoking among pregnant women to 99%).

BRFSS survey data estimated 5.6% of women who drank alcohol in 2002, compared to 4.5% of women in the U.S. South Carolina PRAMS survey data estimated that 4.2% of total pregnant women, 5.1% of white women and 2.7% black women, drank alcohol three months before their pregnancies, and 0.4% of pregnant women including 0.5% of white women and 0.3% of black women drank alcohol during the last three months of their pregnancies. (Healthy People 2010 Objective 16-17a: increase abstinence from alcohol among pregnant women to 94%).

Unintended Pregnancy and Interconception Length

PRAMS survey data estimated that the percent of live births resulting from unintended pregnancy does not have significant changes in the ten-year period, 49.2% in 1993 and 47.2% in 2002. The percent of black live births resulting from unintended pregnancy was double of it for white live births, 70.7% for black compared to 35.3% for white. Live births to younger mothers had higher percent resulting from unintended pregnancy than it for older mothers, 70.7% for mothers less than 19 years of age, 47.1% for mothers 20 to 29 years of age and 31.2% for

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mothers with 30 and more years of age in 2002. Live births with inter-pregnancy conception intervals less than 24 months were 26.7% in 2002. (Healthy People 2010 Objective 9-1: increase the proportion of pregnancies that are intended to 70%. Healthy People Objective 9-2: reduce the proportion of births occurring within 24 months of a previous birth to 6%).

PRAMS survey data shows that the percent of mothers with live births who breastfeed their infants for more than one week increased from 33.7% in 1993 to 53.8% in 2002, 45.5% to 62.5% for white mothers and 16.1 to 34.4% for black mothers. The percent of mothers whom breastfeed their infants for more than one month increased from 21.6% in 1993 to 42.7% in 2002, 29.4% to 49.7% for white mothers and 10.0% to 27.4% for black mothers. (Health People 2010 Objective 16-19a: increase the proportion of mothers who breastfeed their babies in early postpartum period to 75%, 16-19b: increase the proportion of mothers who breastfeed their babies at 6 months to 50%, 16-19c: increase the proportion of mothers who breastfeed their babies at 1 year to 25%).

The prevalence of infant's sleeping position is estimated through the PRAMS survey. From 1995 to 2002, infants sleeping on their stomachs reduced from 32.3% to 19.9%, white infants reduced from 31.0% to 19.4% and black infants reduced from 35.4% to 21.6%. In the same period, infants sleeping on back position increased from 22.7% to 55.8%, white infants increased from 25.4% to 61.8% and black infants increased from 16.5% to 44.1%. (Healthy People 2010 Objective 16-13: increase the percentage of healthy full-term infants who are put down to sleep on their backs to 70%).

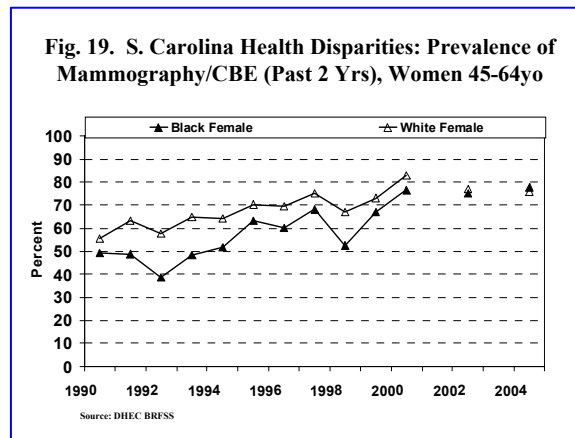
PRAMS 2002 survey data also estimated that 7.4% of live births to mothers who experienced physical abuse before their pregnancies, 4.7% for white mothers and 13.1% for black mothers.

The estimates also indicate that 6.4% of live births to mothers who experienced physical abuse during their pregnancies, 4.4% for white mothers and 10.8% for black mothers.

Mammography and PAP Smears

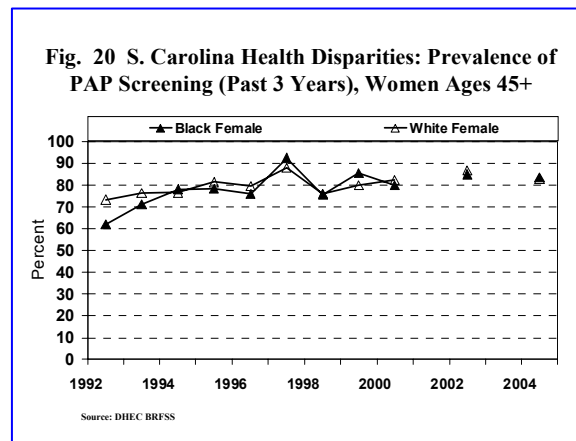
BRFSS survey data estimated that South Carolina women at 50 and more years of age who did not have mammogram within two years decreased from 30.2% in 1993 to 14.4% in 2002, compared to the Region IV average of 23.9% in 2002. [Figure 31]

Figure 31



Women at 18 and more years of age who did not have PAP smear tests within two years decreased from 15.3% in 1993 to 12.2% in 2002, compared to the Region IV average of 15.6% in 2002. Women at 18 and more years of age who did not have any physician visits due to the cost decreased from 19.6% in 1993 to 15.4% in 2002, compared to the Region IV average of 14.7% in 2002. [Figure 32]

Figure 32



STDs

Another serious health issue for women of childbearing age is STD. The overall STD incidence rate (Syphilis, Gonorrhea and Chlamydia) increased 32.0% in the 10-year period to 974.0 per 100,000 population in 2002, while it was 812.0% in Region IV. The STD incidence rate in white population increased 160.9% to 180.0 per 100,000 population and the black rate increased 54.0% to 1,713.0 per 100,000 population. The black-white racial ratio in STD was 9.5. The Syphilis cases decreased from 2,028 in 1993 to 655 in 2002, a 67.7% decrease for the whole population. However, the black-white ratio was 10.9 with the black incidence rate of 39.4 and white incidence rate of 3.6. The number of Gonorrhea cases changed from 7,801 in 1993, with the highest number of cases of 10,807 in 1998, to 7,958 cases in 2002. The gonorrhea incidence rate changed dropped from 424.8 in 1993 to 384.8 per 100,000 black people in 2002, while the rate increased from 21.7 to 23.7 in white population. The Chlamydia cases increased 39.2% in all racial groups from 7,971 cases in 1994 to 12,431 cases in 2002. The Chlamydia incidence rate for white people increased by 243.8% from 18.5 to 63.3 per 1,000 people and the black rate

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increased by 177.9% from 186.5 to 518.2 per 1,000 people. The Chlamydia incidence rate in black population was 8.1 times of it in white population. (Healthy People 2010 Objective 25-1a: reduce the proportion of females ages 15 to 24 years attending family planning clinics with Chlamydia trachoma is infections to 3%. 25-1b: reduce the proportion of females' ages 15 to 24 years attending STD clinics with Chlamydia trachoma is infections to 3%).

HIV/AIDS surveillance data showed that the new diagnose cases dropped from 1,108 (30.2/100,000) in 1993 to 907 (22.1/100,000) in 2002. The infection rate in black population is 8.7 times of the rate in white population, 53.8 per 100,000 compared to 6.2 per 100,000 people. Number of newborns with HIV perinatal transmission dropped from 16 cases in 1993 to 3 cases in 2002. PRAMS data estimated that 84.6% of pregnant women received HIV test during pregnancy. (Healthy People 2010 Objective 13-6a: increase the proportion of sexually active females aged 18-44 that use condoms to 50%). Infants with HIV perinatal mode of transmission decreased from 16 cases in 1993 to 3 cases in 2002.

Children - Mortality

Leading Causes of Death

Figure 33 through 38 show the top ten leading causes of death by age and race, for all of South Carolina's children and young adult's ages 1-24 years. Accidents are the leading causes of death in all age groups. By far the most common type of fatal accidents is motor vehicle crashes. [Figure 33]

Figure 33 - Ten Leading Causes of Death, Ages 1-24		
Cause of Death	Number	Percent
Accidents	365	47.7%
Homicide (Assault)	107	14.0%

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Suicide (Intentional self-harm)	48	6.3%
Cancer (Malignant neoplasm's)	40	5.2%
Diseases of heart	37	4.8%
Congenital malformations, deformations and chromosomal abnormalities	13	1.7%
Influenza and pneumonia	12	1.6%
Septicemia	11	1.4%
Cerebrovascular disease	10	1.3%
AIDS (HIV disease)	7	0.9%
Chronic Lower Respiratory Disease	5	0.7%

The number of deaths for children (1 – 21 years of age) slightly decreased in the ten-year period, from 643 deaths in 1993, with the smallest number of deaths of 573 in 1998, to 604 deaths in 2003. The major cause of deaths is injuries, including unintentional injuries, motor vehicle crashes, suicide and homicide. There were a total of 420 fatal injuries of children from 1 to 21 years of age, 306 unintentional injuries including 196 deaths caused by motor vehicle crashes, 30 suicide deaths and 84 homicide deaths. Children in the age group of 10 to 14 years old and adolescents from 15 to 21 years old have more deaths caused by injuries than younger children. In children ages 1-4 diseases of the heart and homicide are also among leading causes of death in 1-4 year olds. [Figure 34]

Figure 34 - Five Leading Causes of Death, Ages 1 to 4	
Cause of Death	Percent
Accidents	36.0%
Homicide (Assault)	12.0%
Diseases of heart	8.0%
Septicemia	5.3%
Congenital malformations, deformations and chromosomal abnormalities	4.0%

In children ages 5-9, cancer (malignant neoplasm's) is the second most common cause of death. The remainder of the leading causes of death in this population are congenital malformations infectious diseases, diabetes or diseases of the heart. [Figure 35]

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Figure 35 - Leading Causes of Death, Ages 5 to 9	
Cause of Death	Percent
Accidents	42.6%
Cancer (Malignant neoplasm's)	10.6%
Congenital malformations, deformations and chromosomal abnormalities	8.5%
Influenza and pneumonia	6.4%
Anemia's	2.1%
Diabetes mellitus	2.1%
Diseases of heart	2.1%
Homicide (Assault)	2.1%
In situ or benign neoplasm's	2.1%
Septicemia	2.1%

In children ages 10-14, diseases of the heart and malignant neoplasm's are the second and third most common causes of death, and other diseases the third most common causes of death behind accidents. Suicide and homicide are also among the ten leading causes of death in this group. [Figure 36]

Figure 36 - Leading Causes of Death, Ages 10-14	
Cause of Death	Percent
Accidents	41.1%
Diseases of heart	9.6%
Cancer (Malignant neoplasm's)	8.2%
Suicide (Intentional self-harm)	4.1%
Homicide (Assault)	4.1%
Congenital malformations, deformations and chromosomal abnormalities	4.1%
Chronic lower respiratory disease	4.1%

In adolescents age 15-19, homicide is the second most common cause of death, and suicide is the third most common cause of death. Other common causes of death are heart diseases, cerebrovascular diseases, and chronic lower respiratory diseases. [Figure 37]

Figure 37 - Leading Causes of Death, Age 15-19	
Cause of Death	Percent
Accidents	51.7%
Homicide (Assault)	14.4%
Suicide (Intentional self-harm)	6.8%
Cancer (Malignant neoplasm's)	5.5%
Diseases of heart	4.7%

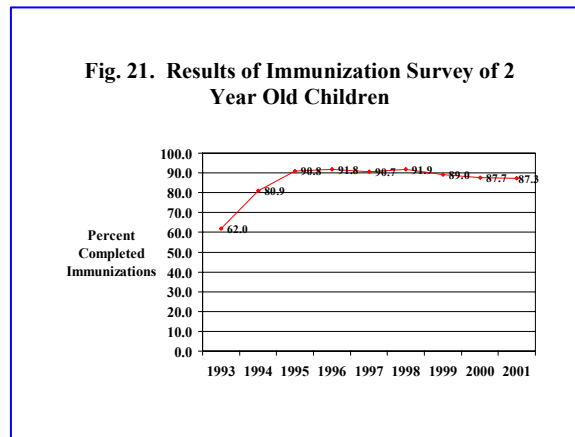
In young adults ages 20-24, homicide is the second most common cause of death, and suicide is the third most common cause of death. Homicide is more than five times more likely to occur in black young adults than white, but suicide is almost four times more common in white young adults than black young adults. It is significant to note that by far the vast majority of deaths in these age groups are preventable. [Figure 38]

Figure 38 - Leading Causes of Death, Age 20-24	
Cause of Death	Percent
Accidents	49.7%
Homicide (Assault)	18.0%
Suicide (Intentional self-harm)	8.7%
Cancer (Malignant neoplasm's)	4.2%
Diseases of heart	3.6%

Immunization

Our survey shows a great improvement in the number of 2-year olds who have finished the complete vaccination series. [Figure 39] South Carolina has improved from just over 60% of 2-year-olds fully immunized in 1993 to approximately 97% in 1998. Immunization coverage has declined slightly in the past 3 years, with most recent rates at 89%.

Figure 39



Children - Morbidity

Asthma

The total number of inpatients and emergency room admissions for asthma cases increased 120% from 11,318 cases in 1993 to 24,621 cases in 2002. The Medicaid covered asthma cases increased 180% from 5,160 cases in 1993 to 14,204 cases in 2002.

Unintentional Injuries

Unintentional injuries are a significant health problem with children and youth in South Carolina. The total number of injuries for all types of injuries, including unintentional injuries, motor vehicle crashes, suicide and homicide, increased 30% from 102,029 cases in 1993 to 134,879 cases in 2003. In 2003 there were 110,384 unintentional injuries, 18,157 injuries caused by motor vehicle crashes, 1,059 injuries caused by attempt suicide and 5,279 injuries caused by homicide.

The trend of increasing number of injuries cases is different by age groups. While all types of injuries increased 36.9% from 1996 to 2003 for all children and adolescents, 10.0% increase for

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infants less than 1 year of age, 30.2% increase for children 1 – 9 year of age, 56.0% increase for children 10 – 14 years of age and 35.7% for adolescents up to 21 years old.

The major injuries occurred for children 1 – 9 years of age are associated with unintentional injuries; the 2003 overall incidence rate is 3,204.7/100,000 children, 3,420.4 for white and 2,939.3 for non-white.

The incidence rate of unintentional injuries for children 10 – 14 years of age increased from 1390.1/100,000 in 1996 to 1908.9/100,000 in 2003, 1444.1 in 1993 to 1963.6 in 2003 for white and 1307.6 in 1996 to 1834.6 in 2003 for non-white kids. The incidence rate of injuries caused by motor vehicle crashes is slightly increased in the same period, from 171.0/100,000 in 1996 to 182.5 in 2003. However, the incidence rate for non-whites much higher than it for whites, 252.6/100,000 compared to 132.2/100,000 in 2003. The incidence rate for injuries caused by attempted suicide is quite stable around 12/100,000 from 1996 to 2003. More white children and adolescents are involved in injuries caused by attempt suicide than non-white, 14.3/100,000 compared 7.7/100,000 in 2003. Injuries associated with homicide increased 16.8% from 57.3/100,000 in 1996 to 66.9/100,000 in 2003. Non-white children and adolescents have 150% more risk to have injuries associated with homicide than white kids, 102.8/100,000 compared to 41.0/100,000 in 2003.

For adolescents aged 15 to 21 years, the 2003 incidence rate of unintentional injuries is 1628.8/100,000 in 2003, which is lower than for younger kids from 10 to 14 years of age. However, adolescents have more chance to have injuries associated with motor vehicle crashes, suicide and homicide. Incidence rate of injuries caused by motor vehicle crashes in 2003 is 588.4/100,000, 511.0 for white and 705.3 for non-white adolescents. The 2003 overall incidence

rate of injuries associated with attempted suicide is 40.4/100,000, 50.8 for white and 24.6 for non-white adolescents. The 2003 overall incidence rate of injuries caused by homicide is 182.5/100,000, 128.8 for white and 263.5/100,000 for non-white.

Behavioral Issues

The Youth Risk Behavior Surveillance System (YRBSS) monitors six categories of priority health-risk behaviors among youth and young adults – behaviors that contribute to unintentional injuries and violence; tobacco use; alcohol and other drug use; sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection; unhealthy dietary behaviors; and physical inactivity – plus overweight.

Violence and Suicide

Data from YRBSS National Survey show that the percent of students at 9 to 12 grade who were in at least one physical fight in the past 12 months dropped from 41.7% in 1991 to 31.0% in 2003, compared to the US average of 42.5% in 1991 and 33.0% in 2003.

YRBSS also surveyed some mental risk factors. The 2003 YRBSS data show that 15.4% of students who seriously considered attempting suicide during the past 12 months; 13.5% of students made a plan about how they would attempt suicide; 11.4% actually attempted suicide one or more times; 3.3% of students had to be treated by a doctor or nurse due to an injury, poisoning or overdose resulted from an attempted suicide.

Sexual Behavior

Sexual behavior is an area of very high risk for teenagers. Sexually active teens are vulnerable to many and potentially life-altering and sometimes life-threatening problems,

including pregnancy, STD's, and HIV/AIDS. Any of these problems have serious health, social and economic consequences for today's teens.

Data from YRBSS show a lot of changes of sexual activities of South Carolina students. The percent of students who had sexual intercourse for the first time before age 13 changed from 21.5% in 1991 to 13.0% in 2003, 10.6% to 6.5% for female students and 32.2 to 20.5% for male students, while the 2003 national average is 7.4%, 4.2% and 10.4% for all students, female and male students, respectively.

Data from 2003 YRBSS survey show that 40.6% of South Carolina students had sexual intercourse with one or more people during the past three months, 36.8% for female and 44.5% for male students; 37.8% of students who had sexual intercourse during the past three months used condom, 32.5% for female and 44.1% for male students; 8.1% of students who had been pregnant or gotten someone pregnant one or more times, 3.7% for white female students and 11.7% for black female students, 6.0% for white male students and 10.2% for black male students.

This constitutes a huge segment of the adolescent population who are engaging in very risky behaviors. Some teens report that they are being pressured or forced into having sex.

STD/HIV

STD's are a serious problem with South Carolina's children and young adults. South Carolina had the third highest Chlamydia rate in the nation in 1997. The overall STD incidence rate (Syphilis, Gonorrhea and Chlamydia) increased 32.0% in the 10-year period to 974.0 per 100,000 population in 2002, while it was 812.0% in Region IV. The STD incidence

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rate in white population increased 160.9% to 180.0 per 100,000 population and the black rate increased 54.0% to 1,713.0 per 100,000 population. The black-white racial ratio in STD was 9.5. The Syphilis cases decreased from 2,028 in 1993 to 655 in 2002, a 67.7% decrease for the whole population. However, the black-white ratio was 10.9 with the black incidence rate of 39.4 and white incidence rate of 3.6. The number of Gonorrhea cases changed from 7,801 in 1993, with the highest number of cases of 10,807 in 1998, to 7,958 cases in 2002. The gonorrhea incidence rate changed dropped from 424.8 in 1993 to 384.8 per 100,000 black people in 2002, while the rate increased from 21.7 to 23.7 in white population.

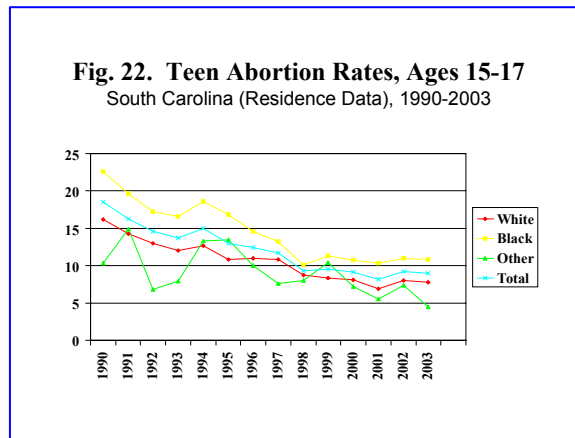
The Chlamydia cases increased 39.2% in all racial groups from 7,971 cases in 1994 to 12,431 cases in 2002. The Chlamydia incidence rate for white people increased by 243.8% from 18.5 to 63.3 per 1,000 people and the black rate increased by 177.9% from 186.5 to 518.2 per 1,000 people. The Chlamydia incidence rate in black population was 8.1 times the incidence in the white population. (Healthy People 2010 Objective 25-1a: reduce the proportion of females ages 15 to 24 years attending family planning clinics with Chlamydia trachomatis infections to 3%. 25-1b: reduce the proportion of females ages 15 to 24 years attending STD clinics with Chlamydia trachomatis infections to 3%).

HIV/AIDS surveillance data showed that the newly diagnosed cases dropped from 1,108 (30.2/100,000) in 1993 to 907 (22.1/100,000) in 2002. The infection rate in black population is 8.7 times of the rate in white population, 53.8 per 100,000 compared to 6.2 per 100,000 people. Number of newborns with HIV perinatal transmission dropped from 16 cases in 1993 to 3 cases in 2002. PRAMS data estimated that 84.6% of pregnant women received HIV test during pregnancy. (Healthy People 2010 Objective 13-6a: increase the proportion of sexually active females aged 18-44 that use condoms to 50%).

Teen Pregnancy

Despite the high number of sexually active teens reported in this state, the rate of teen pregnancy is decreasing. Trends for the past 10 years show a dramatic 60% decrease in abortions to teens. [Figure 40] Live births to teen have shown a 10% decrease over the same time frame.

Figure 40



The pattern of decreases in pregnancies, live births and abortions has been somewhat different for the different groups. In the white population, dramatic decreases have been shown in pregnancy and abortion rates, but live births have remained stationary over the past 10 years. In the black and other population, the decreases in pregnancy and abortion rates have been less dramatic, but the live birth rate has shown a sharper decrease. This trend may indicate decreasing sexual activity among adolescents in the state since utilization of health department family planning services has not changed much in the past 10 years.

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The pregnancy rate for female teens less than 20 years of age dropped about 25% from 45.4 per 1,000 in 1993 to 34.2 in 2002, 35.8 to 29.3 for white and 60.0 to 43.0 for black female teens. The decreasing trend of pregnancy rate can be observed for female teens at all age groups, 3.4 in 1993 and 1.6 in 2002 for teens 10 to 14 years of age, 58.4 in 1993 to 38.8 in 2002 for the age group of 15 to 17 years old, 127.6 in 1996 to 108.4 in 2002 for teens 18 – 19 years of age.

[Figures 41 – 43]

Figure 41

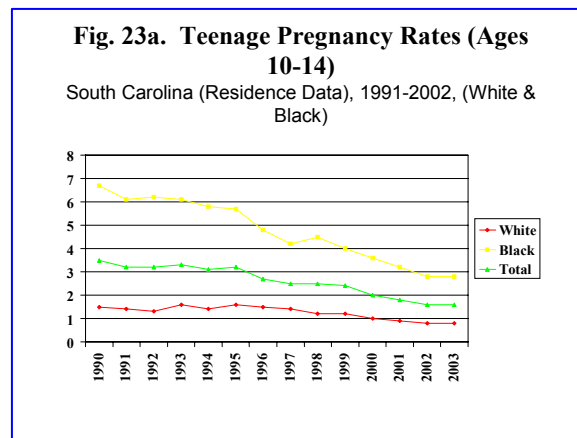


Figure 42

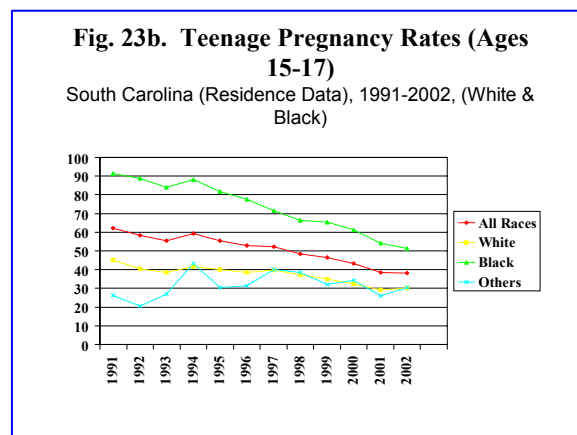
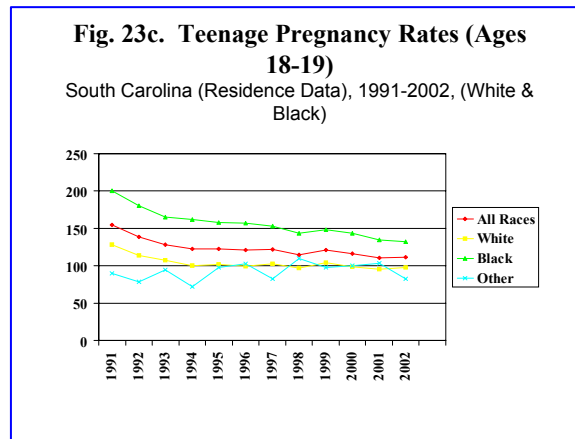


Figure 43



The fertility rate for female teens less than 20 years of age shows the same decreasing trend as the pregnancy rate in South Carolina in the ten – year period. The fertility rate dropped from 33.8 per 1,000 in 1993 to 26.7 in 2002 for all female teens, 26.7 in 1993 to 22.3 in 2002 for white and 57.1 to 35.6 for black female teens. For the teens 10 to 14 years of age, the fertility rate changed from 2.1 per 1,000 in 1993 to 1.0 in 2002. However, the fertility rate for black female teens 10 to 14 years of age is still much higher than it for white young girls, 2.2 for black young girls compared to 0.5 for white girls. The fertility rate for teens 15 to 17 years of age decreased from 45.4 to 28.0, with the decrease from 31.5 to 22.6 for white and 83.2 to 43.6 for black girls. The fertility rate for female teens 18 to 19 years of age also decreased from 98.4 to 87.5, 80.9 to 79.4 for white and 146.9 to 112.4 for black teens.

Substance Abuse

Substance abuse is a serious issue for teenagers. Many lifetime habits of smoking, alcohol use and drug use are initiated during the teen years. Figure 44 shows a comparison of the prevalence

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of smoking, alcohol and common drug use from 1991 and 2003 YRBS, both for South Carolina and nationally.

Figure 44 - Substance Abuse among South Carolina High School Students						
	1991		2003		% change	
	SC	US	SC	US	SC	US
Smoking	25.6%	27.5%	25.8%	21.9%	0.8%	-20.4%
Alcohol	46.9%	50.8%	40.6%	44.9%	-13.4%	-11.6%
Cocaine	2.4%	1.7%	3.5%	4.1%	45.8%	141.2%
Marijuana	12.2%	12.5%	21.8%	19.3%	78.7%	54.4%

The percent of students who smoked cigarettes on one of more days in the past 30 days has not much changed from 25.6% in 1991 to 25.8% in 2003, while the national average percent dropped from 27.5% to 21.9%. The data show that the percent of students who smoked is much higher for white students, 32.7% in 2003 compared to 16.7% for black students.

Data from YRBSS show that the percent of students, who had at least one drink of alcohol in the past 30 days, decreased from 46.9% in 1991 to 40.6% in 2003, while the US rate decreased from 50.8% to 44.9%. The percent for female students is 38.6% (55.4% for white and 30.6% for black); the percent for male students is 43.0% (51.0% for white and 32.7% for black) in 2003, compared to the US average of 45.8% for female students and 43.8% for male students.

The percent of South Carolina students, who used any form of cocaine in the past 30 days, increased from 2.4% in 1991 to 3.5% in 2003, .1 to 2.0 for female students and 3.6 to 5.1 for male students. The percent of drug users among black students is 1.2% in 2003, which is much lower than 4.8 for white students.

Marijuana users among South Carolina students, who used marijuana one or more times in the past 30 days, increased from 12.2% in 1991 to 21.8% in 2003, while the national rate changed

from 12.5% to 19.3%. The percent of black students who used marijuana is 19.5% in 2003, compared to 24.2% for white students.

Obesity, Nutrition, and Physical Activity

Data from 2003 YRBSS indicate that 26.6% of students who describe themselves as slightly or very overweight; and 43.0% of students who were trying to lose weight including 55.7% of female students and 28.9% of male students; 55.6% of overall students who exercise or participated in physical activities for at least 20 minutes that made them sweat and breath hard on three or more days of the past seven days, 48.4% for female students and 63.9% for male students.

South Carolina's children and young adults rank high relative to those in other states with respect to the problems of overweight, obesity, and poor nutrition. Data from the United States Department Agriculture (USDA) shows that significant proportions of young children nationwide have diets that are insufficient with respect to needed amounts of iron, calcium, fiber and total energy. Iron deficiency, in particular, is a significant problem in that it is associated with fatigue, impairments in physical and intellectual development, and lowered resistance to infections. Shortages also exist for the recommended daily intake of calcium, fiber, and total calories.

Children and adolescents in the state seem to have, in general, poor eating habits. However, information on nutritional status and level of physical activity of South Carolina's children is sparse. One of the very few sources available, the 1999 YRBS, states that although fruit, vegetables, and salad were eaten at least once a week by 79%, 82%, and 57%,

respectively of respondents, only 18% ate the recommended 5 fruits and vegetables, and 12% reported drinking 3 glasses of milk per day.

Information on obesity in the children and youth of South Carolina is not readily available. However, weighted estimates from NHANES III would indicate almost 140,000 overweight children and almost 70,000 obese children ages 6-17 live in the state. Using these estimates, approximately 21% of South Carolina's school age children are overweight and 10.5% are obese. Nationally, about one in five children have been reported to be obese. Prevalence rates by race and gender for children in South Carolina are not readily available.

Obesity is a disease that is much more easily prevented than treated after its onset. Strategies for prevention in school age children may include reducing the fat and calorie content of School Lunch meals, limiting the availability of high-fat, high-calorie snacks in schools, teaching nutrition in the classrooms, and encouraging increased physical activity in both in and out of the school environment. This is an emerging health problem, and one that is getting increased emphasis with respect to program planning now and in the very near future.

In South Carolina, available programs exist along a continuum, which provides adolescents with access to programs that address their current and potential risk status. These programs range from abstinence-only until marriage, including programs for preteens and their parents, which stress chastity as well as abstinence, to medical services for adolescents who are actively engaged in the highest risk taking behaviors. Not all programs are statewide. Primary prevention programs, which are mostly educational and instructional interventions, frequently occur at school, in the home, or in faith settings. Teenage pregnancy prevention

advocacy groups have been effective in establishing these programs at the community level throughout the state.

Examine MCH Program Capacity by Pyramid Levels

Direct Health Care Services

The role of the Department of Health and Environmental Control (DEHC) at the community, district and state level is moving away from the provision of direct clinical services and toward building, supporting and facilitating community health care systems through core public health assessment, assurance and policy development functions. While these changes provide many rich opportunities to integrate systems and increase public/private partnerships, it is a paradigm shift for staff.

This shift away from Direct Health Care services can be seen in many different areas within DHEC. The Agency provides significantly fewer early and periodic screening diagnosis and treatment (EPSTD) evaluations, immunizations and prenatal care appointments, which are now mostly done in the private sector. DHEC has gone from 120 Children with Special Health Care Needs (CSHCN) clinics to less than twelve across the state and many other examples exist of how direct services have been greatly reduced throughout the agency. One direct service still in place, with Department of Health and Human Services (DHHS) funding is Newborn Home visits with the Medicaid population. However, this service is contingent on funding from an outside agency, DHHS, which itself is under tremendous pressure to cut costs. In addition, occupational therapists, physical therapists and other support staff under contract to the BabyNet, the MCH Bureau early intervention program, and home health nurses provide direct services. The state

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legislature is considering moving BabyNet to another agency and contracting newborn home visits to a private entity, all of which may diminish our providing direct care services further.

With the budget cuts and prioritization towards more population based services and infrastructure building services, the capacity of the MCH Bureau with direct health care services is severely limited. Unfortunately, our knowledge of the capacity of our partners, including clinicians and obstetricians, and other agencies is limited, and not readily available. We do know that there is much less “care” available in the rural areas and poor sections of urban communities, as is the case throughout the United States. It is unfortunate that strong partnerships do not exist between DHEC and community health clinics and rural clinics, a barrier and mindset we hope to overcome. Due to DHEC’s growing lack of internal capacity, South Carolina’s external capacity must be more fully explored, and if necessary, enabled to expand to meet currently unfulfilled direct health care service needs. This will require real collaborative leadership, as exemplified by the Turning Point Mobilizing for Action through Planning and Partnership (MAPP) process. The Turning Point process is in place in a limited number of counties in South Carolina. We, in the MCH Bureau, would like to incorporate some of the MAPP processes into our own enabling and infrastructure building programs.

Enabling Services

The MCH Bureau continues to provide several enabling services across the state. The WIC) Program, supported by USDA, screens populations and identifies those at nutritional high risk, provides counseling to improve nutritional practices and provides food vouchers. At certification, the WIC Program also screens all children two years old or less with a documented immunization record to assess the immunization status. The WIC Program provides immunization information and referral for immunization services if the infant/child is

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under immunized. Through the WIC Farmers Market Nutrition Program, WIC participants receive coupons to use at local farmers markets to purchase fresh fruits and vegetables. This program has been extremely successful and with additional funds provided by USDA will expand to more local health departments.

Another primary enabling service is through Family Support Services, which assists individuals on Medicaid. The primary focus of Family Support is to identify clinicians for patients and schedule appointments. Through this mechanism, we also provide support for patients through health education and nutritional counseling. We try to help patients and families meet their psychosocial needs through social work services. We provide some limited disease management. The Medicaid agency has proposed markedly reducing funds that support these services. They are expanding care coordination/case management models in a primary care system. Therefore, we hope to adapt to these changes by providing support through a case management/care coordination model, with salaried employees, rather than using the current fee-for-service model, which is how we are paid now for Family Support Services. In early June 2005, the Medicaid agency plans to release a Request For Proposal with the expressed intent to award the contract to a private vendor that will provide care for pre and postnatal patients at risk and their pre-term infants. We do not yet know if this will further erode our infrastructure and capacity. This issue is extremely volatile at this point, but we will adapt to fiscal realities.

Unfortunately, most of the capacities within enabling services lie with those enrolled on Medicaid. Despite the Bureau's mission to enhance health for all, it appears our capacity to provide support for the uninsured, underinsured and those on private insurance is very limited. We must strive to find ways to expand enabling services to reach more of the maternal and child health populations in the future. To expand enabling service, we hope to increase our

partnerships with First Steps (an early education service for uninsured and underinsured families), Healthy Start, Blue Cross Blue Shield, federally funded rural and community health clinics, through more cross bureau and cross agency grants. We also hope to provide better support for clinicians through enhancing and expanding medical homes for a wider sector of the population through an Early Childhood Comprehensive Systems Grant.

Population-Based Services

The MCH Bureau is hoping to invest more staff and resources in the Population-based service area. The MCH Bureau's oral health division provides population based services through programs aimed at increasing public awareness about oral health issues, training primary care clinicians on how to do varnish applications and training general dentists to provide pediatric dentistry. The MCH Oral Health program is based on a thorough and inclusive needs and capacity assessment conducted several years ago, which led to a comprehensive State Oral Health Plan.

The State oral health team coordinates planning, implementation and evaluation of oral health improvement with State and community partnerships; provides staff support to the South Carolina Oral Health Advisory Council in implementing and evaluating the State Oral Health Plan and in promoting systems and policy changes; provides staff support to the South Carolina Oral Health Coalition in implementing and evaluating an action plan for initiatives that are consistent with the State Oral Health Plan; coordinates with State and local partnerships to conduct and evaluate an annual oral health forum; conducts community meetings to plan and implement oral health improvements; and collects, evaluates and shares program accomplishments with key stakeholders.

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The plan calls for DHEC to coordinate a public health dental program using public/private partnerships to deliver preventive dental services in public health settings that address the needs of priority populations identified by standard public health principles.

- DHEC shall be responsible for working with School Dental Program and local schools to conduct a needs and resources assessment for the development of a health services plan.
- The DHEC Oral Health Division and the Oral Health Advisory Committee's SDP Workgroup shall review and approve written policies and procedures for all aspects of the program in accordance with the current "Guidelines for S.C. School-Based Dental Prevention Programs."
- DHEC will provide Primary Care Enhancement or family support services for clients referred by SDP to the dentists for urgent dental care.

The First Sound Program identifies children with hearing loss and assures that the children receive follow-up with an audiologist and an ear, nose and throat doctor. Support for lead screenings are also part of the population based health services provided by the Agency. Support for clinicians to give immunizations is provided by the agency Bureau of Acute Disease Epidemiology. We hope to expand our working relationship with the Bureau of Acute Disease Epidemiology, as we begin to build an agency information architecture to better serve our clientele, both clinicians and patient populations.

Unfortunately, the MCH Bureau's capacity in education and outreach is marginal. This is partly due to current political constraints, as well as lack of staff and commitment to outreach to

the public. If outreach through expanded public relations became a priority within population-based services and received adequate support and funding, more individuals would be aware of DHEC and its mission as well as the services available. Outreach and education are critical programs to improve the health of mothers and children, but have been cut dramatically due to recurrent annual budget cuts. Despite staff commitment to this mission, limited personnel capacity and funding make outreach yet another area of frustration, since we would like to reach a greater proportion of our population, regardless of insurance status.

Infrastructure Building Services

Infrastructure building is a relatively new priority within the MCH Bureau. All resources and staff will inevitably be shifted from the top of the pyramid toward the bottom, due to funding constraints and political realities. However, at this time, many resources are being allocated towards providing direct health care services. This paradigm shift will be a gradual process, which will take much time, training, and commitment to and from staff. The Bureau is currently planning to hire an information architect to manage the information systems within Maternal and Child Health, in cooperation with all others in the agency, with a commitment to build a seamless integrated system. This architect will be an important catalyst for system change and redesign of programs within the MCH Bureau and Agency. If the information systems are not adequately funded and not working efficiently and effectively, it will not be possible to realign staff and resources and fulfill the new direction of the MCH Bureau.

In addition, evaluation will continue to be a priority, but will be enhanced by adoption of the full range of performance management, which includes benchmark based performance standards, performance measurement, feedback to staff and external partners and quality improvement. These techniques will be adopted in the MCH Bureau in conjunction with the Agency Central

Office. As part of infrastructure building services, the staff at the Central Office in the MCH Bureau will help teams at the local and regional level adopt similar methodologies and processes.

Hopefully, MCH Epidemiology will also be improved. For the past decade, the MCH Bureau has failed to build a quality MCH Epidemiology unit. Because of that, the MCH Bureau has decided to embark on a new direction. The MCH Bureau hopes to contract with the RAND Corporation, as well as to partner with scientists, mathematicians, and epidemiologists from the UCLA Center for Healthier Children, Families, and Communities, the University of South Carolina School of Public Health, the National Oceanic and Atmospheric Administration, the South Carolina Office of Research and Statistics and South Carolina DHEC Public Health Statistics and Information Systems (PHSIS) to provide sophisticated support for an on-site epidemiologist. From these partnerships and contracts, it is hoped that the MCH Epidemiological needs of the MCH Bureau will be met. Better epidemiological support will assist the bureau and its divisions meet their objectives in a more coordinated fashion. Support from high quality epidemiologic services will enhance the capability of the MCH Bureau to conduct the needs assessment over the course of these next four years. The MCH Bureau is very optimistic about these new California – South Carolina partnerships.

Selection of State Priority Needs

1. Improve data and surveillance systems. (Infrastructure Building Service).

Public Health and Health Care institutions are moving towards evidenced based practice and performance management systems. To accomplish the promise of these systems approaches, we must have an integrated information architecture to efficiently manage patients and populations. Clinicians need specific information in real-time to manage their patients. Public health staff, that support clinical practice with care coordination, case management and disease management,

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need to access information and need systems to trigger targeted interventions. For planning targeted programs, surveillance systems need to clarify causes of poor outcomes, so funding can be used as efficiently as possible.

The MCH Bureau has already begun to work with South Carolina's Public Health Statistics and Information System Bureau to create master client indices to identify new-borns to enable systematic tracking through their life course. We also partner with the state Office of Research and Statistics of the South Carolina Budget and Control Board to attend to the multiple interactive predictor variables that contribute to population outcomes and serious health disparities. As noted above, we plan to extend partnerships to collaborate with other agencies, and other educational and federal institutions, so we can analyze our data in more comprehensive ways.

Screening in the newborn period for metabolic disorders and hearing problems require integrated systems to achieve the promise of these screening processes. Once the systems are set in motion, incorporating surveillance and tracking systems will enhance screening for developmental issues, lead levels, immunization tracking, WIC documentation, universal risk assessment for women of childbearing age, management of children and youth with special healthcare needs, etcetera. The systems must be integrated with other Information Systems in our agency, as well as with other state and national partners. With those issues in mind, and the critical importance of information management in the 21st century, this is our highest priority.

Assigning overworked personnel in this attempt at a needs assessment has been too painful, less effective than we had hoped and unfair. We need dedicated personnel to make the five-year needs assessment remain vibrant.

2. Improve access to a coordinated system of care through a systems approach.

(Infrastructure Building Service).

Crucial to this priority is a commitment to partnership through enhanced identification of children at risk and clinical and preventative programs (includes primary, secondary and tertiary). These partnerships will include clinicians, the Bureau of Acute Disease Epidemiology (immunization), Bureau of Prevention and Chronic Disease Management, Family Connection and community partners. In our society, best practices for children have been described, itemized and proposed to clinicians. Unfortunately, most clinicians do not have the resources to accomplish the full spectrum of best practices for developmental issues, psychosocial issues or managing complex chronic disorders. They do, however, engage in prevention management, but not to the extent recommended in the Bright Futures programs from the American Academy of Pediatrics. The full range of services suggested in Bright Futures can only be provided for children and their families through public/private partnerships, with population based interventions enhancing clinical interventions. Tracking systems with benchmarks and feedback to clinicians can only come from organizations like the MCH Bureau to help clinicians improve their performance. We need to approach, create and coordinate what the MCH Bureau can offer with the excellent approaches from our sister bureaus in chronic disease management, immunization branch, acute disease epidemiology, private vendors and others. Selecting adequate care for children as a priority for our bureau will help integrate our work to enhance medical homes that should benefit the entire community.

3. Increase access to a coordinated system of care through comprehensive medical home partnerships. (Infrastructure Building Service).

A medical home ensures comprehensive health for its patients. Characteristics of the medical home defined by the American Academy of Pediatrics (2002) include healthcare that is

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accessible, family centered, continuous, comprehensive, coordinated, compassionate and culturally effective. The needs of children and youth with special health care problems must continue to be an important part of this priority to provide medical homes for children. The children with special needs and their families have immense burdens getting through the day, getting coordinated, respectful care for multiple complex medical problems and getting the support they need from the community (as provided by Family Connections, an organization of support families who have a history dealing with challenging problems of their own). In addition, by broadening the scope of our work on medical homes, we hope to identify a far larger proportion of our children and youth with special healthcare needs. At this time we have identified 3000- 4000 children, but community surveys indicate the number of children with special needs is actually in the hundreds of thousands. We do identify and serve infants with obvious problems at birth, and infants who have sustained challenges during the neonatal period, especially for babies born too early or too small. We miss too many who have special needs that are less obvious. So we must improve screening, surveillance and information systems to identify a higher proportion of those in need and get them and their families that coordinated care.

There are real barriers for access to and utilization of a medical home for many of South Carolina's children. The Office of Research and Statistics at the South Carolina Budget and Control Board, recently used Medicaid data and an operationalized definition of medical home developed by the state's Title V program to analyze who has a medical home by age group. The data reflect adherence to a well child office visit schedule to the same provider. Primary care visits included physician offices, Federally Qualified Healthcare Centers and Rural Health

Centers. Primary care providers consisted of family practice, general practice, internal medicine, pediatrics and nurse practitioners. [Figure 45]

Figure 45 - PERCENT OF MEDICAID CHILDREN AGES 0 – 8 YEARS IN SOUTH CAROLINA, AS OF JULY 1, 2001, WITH A MEDICAL HOME.		
<u>AGE</u>	<u>WHITE</u>	<u>AFRICAN AMERICAN</u>
0-3 months	70%	64%
4-7 months	75%	71%
8-12 months	75%	70%
13-17 months	74%	67%
18-23 months	76%	67%
2 years	77%	66%
3 years	82%	69%
4 years	79%	66%
5 years	74%	60%
6 years	72%	55%
7 years	80%	63%
8 years	87%	77%

Unfortunately, the vast majority of these Medicaid eligible children get limited developmental screening, limited assessment of psychosocial status, and relatively infrequent lead level testing, all of which should be part of the Early Periodic Screening, Diagnosis and Treatment (EPSDT) services. If patients are screened and found to need further interventions, clinicians often do not know about Maternal and Child Health Programs (or related agency programs) to support these families, and less well, know how to access those services. This was revealed in the focus groups conducted with clinicians and clinicians in training (pediatric and family practice interns and residents) who we interviewed during this process.

So an important next step in achieving improvement in clinical care through well functioning widely available medical homes is to implement the four foci of the Child Health Connection.

These are:

- Redesign County Health Department Maternal and Child Health programs and make them much more accessible and widely known. This will require organized efforts using Continuous Quality Improvement methodologies to

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create useful targeted programs through central office and county health department collaborations, to include community partners, followed by organized efforts to disseminate, implement, evaluate and further improve these programs. In late May 2005, we applied for a Early Comprehensive Childhood Systems grant to accomplish this goal, and have already received a Medical Homes grant to accomplish the same ends.

- Create and implement an awareness campaign and modular training for clinicians to know about what we in health departments through Maternal and Child Health programs can offer and how to use our services easily and effectively. The modular training for a web-based clinician training system has already been launched in May 2005 in partnership with South Carolina State University - Orangeburg.
- Create an information architecture to support the above.
- Establish sustainable funding mechanisms through grants and expanded collaborations to support the above.

Women of childbearing age, including pregnant women, should also be in well functioning coordinated medical homes to have comprehensive care to fulfill their health care needs. With an expanded CHIPS program, these women could and should have medical care beyond prenatal care. The bureau is dedicated to working with its partners to help achieve this goal.

It is important to note that the priority states for all MCH populations in South Carolina is to have a medical home. Therefore, the MCH Bureau will not focus efforts only on women and children on Medicaid or CSHCN, but the entire population. In that regard, finding sustainable funding mechanisms to provide widespread support will be a crucial undertaking. The priority is

to ensure that all MCH populations, children and family members, in South Carolina receive comprehensive health care. Through this, enormous benefits can result, which is why this was selected as a priority.

4. Decrease health disparities through the utilization of cost effective strategies monitored through a performance management system. (Infrastructure Building Service).

When measures are addressed that record performance, we find that we identify and interact with only a fraction of the patients who are vulnerable and need services. We serve too few patients at nutritional risk, far too few infants and children with developmental delay and too few high-risk women of childbearing age. Indeed, once in our system of care, we fail to provide a link to our other services for those at risk. Children with hearing loss are not sent to our early intervention programs. Families getting WIC services are not managed at an appropriate level for family planning. Many disadvantaged children in South Carolina suffer from poor dental health that has repercussions far beyond the oral cavity, with too few dental providers and a system that largely ignores the contributions to morbidity from dental decay. Under identifying and under-serving these populations are lost opportunities to maximize interventions and improve outcomes. An integrated surveillance and data system, with tracking capacity and mechanisms to begin the cascade of appropriate interventions, will enhance our ability to identify and intervene with patients who need our services with coordinated programs across the MCH Bureau and Agency. Adopting a surveillance system will also provide mechanisms for tracking performance management, a process to which we are fully committed.

5. Reduce unintended pregnancies. (Enabling Service).

The health status of mothers and infants is a national and state priority because the infant mortality rate in the US (and South Carolina) is higher than that in 22 other industrialized nations. Although in the last decade we have observed improvement in South Carolina, we still have a long way to go to meet the 2010 objective of 4.5 deaths/1000 live births. Family Planning is a public health preventive service that addresses infant morbidity and mortality through the provision of clinical and educational services designed to prevent unintended pregnancies [Figure 46] and promote the likelihood that babies are appropriately spaced [Figure 47], that pre-conceptional counseling is provided relative to the practice of healthy behaviors prior to becoming pregnant and to address risk factors associated with adverse perinatal outcomes (obesity, diabetes, hypertension) prior to planning a pregnancy. Family Planning is a concept and much more than the provision of birth control.

Figure 46 - Percent of Live Births Resulting from “Unintended Pregnancies” By Age

Year	Ages <19 Years						Ages 20-29 Years						Ages 30+					
	SC			Region IV			SC			Region IV			SC			Region IV		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
1993	74.6	61.8	84.8	73.4	62.8	85.6	48.8	36.5	68.4	49.0	42.0	66.4	33.1	28.1	46.5	34.9	28.0	54.6
1994	77.5	70.4	82.5	71.5	59.8	85.0	45.4	37.8	59.1	48.3	40.5	67.6	31.3	21.4	55.1	34.4	27.7	57.2
1995	77.2	71.4	80.6	76.1	68.5	86.1	51.2	39.0	73.0	46.6	38.4	67.7	32.1	28.7	42.5	31.9	27.7	49.8
1996	78.7	73.4	82.6	71.8	69.2	79.9	51.5	40.1	75.6	45.4	37.6	66.9	33.9	24.0	56.6	31.2	27.3	47.7
1997	79.9	72.5	88.2	68.0	63.8	77.6	45.1	36.3	59.9	45.6	39.1	65.3	33.6	32.7	37.5	31.6	29.1	47.6
1998	71.0	66.2	74.2	71.9	66.8	79.1	42.9	34.2	57.8	44.0	36.0	65.3	24.2	18.8	36.3	27.8	23.3	45.3
1999	68.3	63.2	73.1	70.9	65.0	83.3	43.2	35.0	57.1	43.6	37.4	64.3	23.7	18.3	45.3	24.1	20.5	46.9
2000	75.7	68.1	82.6	73.7	65.9	85.0	44.2	33.4	65.8	48.1	40.6	66.2	29.5	21.8	46.4	29.6	25.4	43.7
2001	76.3	61.8	63.8	-	-	-	48.4	39.9	62.2	-	-	-	28.5	25.8	34.9	-	-	-
2002	70.7	68.4	76.5	-	-	-	47.1	34.5	70.4	-	-	-	31.2	21.7	54.8	-	-	-

Source: RNDMU Data Book

Figure 47 - Percent of SC Live Births with Inter-pregnancy Conception Intervals of <6 months or <24 months

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Year	% of SC live births with inter-pregnancy conception interval less than 6 months			% of SC live births with inter-pregnancy conception interval less than 24 months		
	Total	White	Black	Total	White	Black
1993	12.7	11.8	14.4	-	-	-
1994	13.9	12.6	15.8	29.5	28.5	31.0
1995	13.1	12.6	14.1	27.6	26.9	29.0
1996	12.2	11.9	12.6	27.2	26.5	28.4
1997	11.7	11.8	11.5	26.3	26.2	26.6
1998	11.9	11.7	12.4	26.6	26.7	26.5
1999	12.1	12.0	12.4	25.5	25.7	25.4
2000	11.5	10.9	12.6	26.7	26.4	27.2
2001	12.5	12.4	13.2	26.9	26.5	27.8
2002	12.0	11.8	12.6	26.7	26.6	27.2

Source: Birth certificate, Public Health Statistics and Information Services, DHEC

As can be seen from the table on unintended pregnancies [Figure 44], the African-American population has dramatically higher rates of unintended pregnancies from adolescents to the end of the childbearing years. If we can better understand the causes of this disparity, we might be able to create programs to close the gap between these two groups. As with infant mortality, it is likely that a life course perspective will need to be viewed as the time frame for interventions. Interventions over a person's life course will inevitably involve a broader array of partners; education, housing, the business community, families, etcetera. This needs assessment should lead us to more collaborations, if we have any hope of improving these disparities. See Priority Six for further discussion

Many women and men in South Carolina do not have access to a primary care physician and cannot afford private care. In FY 2004, 107, 451 low-income women and men received clinical preventive family planning services from DHEC. Comprehensive services include education and counseling, a complete individual and family history, a physical exam including, for women, a pap smear to detect cervical cancer and lab testing including pregnancy tests as indicated. Clients also are assessed for sexually transmitted infections

(including HIV with informed consent). In addition, clients receive legally prescribed drugs and other methods of contraception and follow up for abnormal findings, as required by program guidelines.

Sexually active women and adolescents who are at risk of an unintended pregnancy (most teens who are our clients have been sexually active for nearly a year, frequently are brought in by their parent, and 60% have previously presented for a pregnancy test) are offered a broad range of acceptable and effective medically approved methods of contraception including abstinence, hormonal contraceptives, intrauterine devices, barrier methods, instruction in “Natural Family Planning” and permanent methods for men and women following stringent federal regulations.

It is estimated that for every public dollar spent for family planning services, an average of \$3 Medicaid dollars are saved in averted pregnancies. Lifelong socio-economic impact is realized for each teen pregnancy.

The Family Planning Program in South Carolina is a model program that seeks to provide clinical preventive services through partnership with the state Medicaid agency and with other public and private providers across the state. South Carolina has worked with an organization called Healthmetrics who have evaluated clinic sites across the state to determine the degree to which South Carolina’s Family Planning services can be described as “Best Practice.” As a result of this evaluation, recommendations have been implemented that improve efficiency by improving clinic operations and kept appointments, and that improve staff and client satisfaction. Implementing these recommendations statewide is a priority for this Agency over the next year.

The MCH Bureau believes Family Planning is vital to enhancing the health of the maternal and child populations in South Carolina. It is not just enough for a woman to visit the Family

Planning clinic once. The MCH Bureau wants to encourage multiple visits with prompt follow-up.

6. Increase the application of public health research findings to public health program planning, implementation and evaluation. (Infrastructure Building Service).

As far back as Aristotle, Virchow and Engles, visionaries knew that social and economic conditions had a great impact on health outcomes. The relatively narrow focus of the medical model of causality, exemplified by the Koch postulate, did have great success, when acute infectious diseases were the main focus of public health. However, we now face complex chronic diseases as the major cause of morbidity and mortality in our populations. In that regard, the life course perspective of disease causality, with interactions between environmental conditions, social attitudes (especially racism), genetically predetermined immune responses, individual and community stressors, faith and belief models, economic conditions, nutritional milieu, family, coping styles, social support networks, international conflict, emerging pathogens, etcetera, will require the we use of new epidemiologic and mathematical tools to understand who is at risk, for what and when. (See Infrastructure Building Services in the previous section for details). We may finally understand root causes of morbidity and mortality that involve multiply interactive predictor variables, so we can target interventions to achieve improved health outcomes more efficiently.

As an example of adverse health outcomes rooted in socio-ecologic causes, there are sharp disparities between health and well-being indicators for white families and African American and “other” families. The rates of very low birth weight, early prematurity and infant mortality in Black and other minority mothers are over 2.5 times those of whites. Larger racial disparities exist at comparable levels of maternal age, education, income, and marital status. The infant

mortality rate for Black infants is 15.9 per 1,000 live births compared to 5.9 per live births to white mothers.

Another issue that relates to expanding our focus on socio-ecologic causes is the emergence of a Hispanic population in South Carolina. The number and percentage of births in which mothers were of Hispanic origin have increased dramatically. In 1995, the number of Hispanic births was 1,147 or 2.2% versus 3,188 or 5.85% in 2001. This is due, in large part, to the fact that the Hispanic population has more than tripled during the last ten years. According to the 2000 Census, the percent change in growth for the Hispanic population in South Carolina was 211.2%, as compared to only 57.9% for the United States. Of the 60,628 Hispanic households in South Carolina in 2000, nearly 20%, or one in five, were linguistically isolated, which means family members 14 years and older have difficulty with the English language. This type of social and linguistic isolation presents significant barriers for the Hispanic population to access health care services, especially in rural communities. So this part of our community must also be in our purview, as we look at socio-ecologic conditions causing adverse health outcomes.

Due to shrinking public health resources, if it is imperative that our efforts be specifically targeted to those populations who need what we and our collaborators offer. With multiple determinants as contributors to health outcomes in mind, we have made this a South Carolina Maternal and Child Health Bureau priority, to use the most sophisticated models we can create to find who needs our help and thence to plan targeted programs to use our limited agency and community resources and personnel as effectively as possible.

7. Increase the implementation of fetal and infant death review processes. (Population Based Service).

Infant mortality is viewed as a sentinel event that serves as a measure of a community's social and economic well being as well as its health. Thus, experts and advocates have attempted to assure that needs of women, infants and families continue to be met, especially in times of budget cuts and reorganization.

Fetal and Infant Mortality Review (FIMR) has emerged as a community process that can address these concerns. FIMR is used at the local level for assessing, planning, improving and monitoring the service system and broad community resources that support and promote the health and well being of women, infants and families. Information from reviews is being used to guide policy development and define and maintain quality programs. FIMR provides an opportunity to develop:

- A warning system that can describe the effects of health care system change. In these changing times, FIMR provides invaluable information that helps communities understand how these changes affect families trying to access services.
- A method to implement continuous quality improvement (CQI). CQI developed as a means to achieve a better product by identifying best production practices and implement them. FIMR, also, develops creative and innovative practices and solutions.
- A means to operationalize core public health functions. FIMR provides for improved public health needs assessment and quality assurance as well as a basis for policy development.

FIMR in South Carolina was instrumental in developing the Motion Matters program that helps mothers recognize the importance of fetal movement and steps to take when lack of movement is found. FIMR also developed a Safe Sleeping program for infants when reviews

showed that infant deaths were due to co-sleeping practices or using adult beds for infants. The importance of the inter-conceptional period has been highlighted by FIMR including birth control upon discharge from the hospitals. FIMR is also working closely with vital statistics to correct documentation discrepancies between the medical records and the vital statistics records. FIMR is working with physicians around the state to stress the importance of women having a healthy lifestyle before they get pregnant and to plan their pregnancies accordingly. The FIMR process is currently active in only 17 of the 46 counties. Expanding the number of counties where infant and fetal death review is practiced could reap benefits, which has led to our selecting this issue as a priority for the MCH Bureau.

8. Increase the initiation and duration of breastfeeding. (Enabling Service).

Breastfeeding has long been recognized as the optimal method of infant feeding due to its many benefits to both the infant and mother. Examples of the many advantages are as follows:

- Breast milk is easier for the baby to digest.
- Babies have less diarrhea.
- Breast milk helps prevent ear infections.
- Breast milk is clean, warm and ready to serve.
- Breastfeeding is easy; no bottles to heat in the middle of the night.
- Breastfeeding helps protect mother from uterine and breast cancer, and osteoporosis.
- Breastfeeding helps the mother quickly return to her normal weight.
- Breastfeeding reduces allergies and wheezing in infants/children.
- Breastfeeding reduces infant hospitalization and sick visits to physicians.

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South Carolina mothers rank 43rd out of all states in breastfeeding rates. [Figure 48] Even though breastfeeding is the best choice of infant feeding, a large proportion of women in South Carolina are not initiating breastfeeding. As health professionals, we have a responsibility to provide services to optimize the health of the mothers and children in South Carolina. The WIC Program requires all pregnant women “shall be encouraged to breastfeed unless contraindicated for health reasons.” The WIC program is partnering with the Community Health Bureau within DHEC to increase breastfeeding initiation and continuation in the state. Outside of the WIC program, there is no direct mechanism to track ongoing breast-feeding rates in the rest of the population, so we rely on PRAMS data for our information, with the limitations inherent in a survey system. Electronic medical records available to public health information and surveillance systems would be an excellent resource to expedite such tracking for breast-feeding and many other practices, such as high risk pre-conceptual and prenatal assessment. This relates to our first priority of building an information architecture for the Bureau and all our partners. A Breastfeeding Collaborative has also been formed to address the need for more education and programming across the state.

Figure 48 - Percent of Mothers that Breastfed for More than One Week and More than One Month

Year	Breastfeeding for more than one week				Breastfeeding for more than one month			
	Total	White	Black	Hispanic*	Total	White	Black	Hispanic*
1993	33.7	45.5	16.1	-	21.6	29.4	10.0	-
1994	33.9	46.3	15.6	-	22.4	31.5	8.8	-
1995	39.2	50.8	20.7	45.8	27.9	36.5	14.0	24.6
1996	45.6	55.4	27.2	84.0	32.4	40.0	18.0	70.6
1997	45.9	58.6	22.3	79.7	33.5	43.9	15.3	53.1
1998	48.3	56.1	34.6	73.8	36.9	44.7	23.5	73.6
1999	49.2	56.9	34.4	50.3	35.5	41.6	23.4	32.1
2000	48.1	60.1	23.2	60.2	35.8	45.0	16.3	48.6
2001	52.7	61.6	34.0	83.3	38.6	46.2	24.3	69.7
2002	53.8	62.5	34.4	80.5	42.7	49.7	27.4	66.2

Source: PRAMS, Public Health Statistics and Information Services, DHEC

Note: Hispanic Population may be included in the white/black populations. Hispanic is referent to an ethnicity, not a race. Ethnicity is reported independently of race on the birth certificate. Hispanic refers to those people whose origins are from Spain, Mexico or the Spanish-speaking countries of Central and South America.

9. Increase access to developmental screening for children. (Population Based Service), and
10. Improve access to comprehensive risk assessments. (Population Based Service).

It has long been established that public health screening programs are vital to the well being of women and children. [Figure 49] Infants are tested shortly after birth for many genetic and metabolic conditions where pre-symptomatic diagnosis offers a distinct benefit. Early treatment of these disorders reduces morbidity and mortality and allows the affected infant the best chance for healthy growth and development. Likewise, screening infants at birth for hearing loss is vital to early identification so that speech and language development can be optimized. [Figure 50] Targeted blood lead screening of at risk children likewise provides for early identification of affected children. Sources of lead in the child's environment can also be identified and steps can be undertaken to render the lead inaccessible to the child. Women of childbearing age, especially pregnant women, should have universally recognized high risk screening assessment. Once assessed, these screens should be available to clinicians who care for this population or to public health personnel who could intervene with population preventive services. They should also be available to public health personnel who are trying to improve birth outcomes through targeted interventions and those who are designing programs that are evidenced based. Therefore, these screens should be done electronically and stored in ways that clinicians and support personnel can access the records.

Figure 49 – Federal Performance Measure #1

The percent of newborns that are screened and confirmed with condition(s) mandated by their State-sponsored newborn screening programs (e.g. phenylketonuria and hemoglobinopathies) that receive appropriate follow up as defined by their State

Parameter	Trends					Current	2008 Goal
	Year	99	00	01	02		
%	Actual	99	99	99	99	99% (2002)	99%
	Goal	99	99	99	99		

Figure 50 - Federal Performance Measure #12

Percentage of newborns that have been screened for hearing before hospital discharge

Parameter	Trends						Current	2008 Goal
	Year	99	00	01	02	03		
%	Actual	43.3	41.2	95.0	98.4	98.1	98.1% (2003)	100%
	Goal	40	60	77	98	99		

All children benefit from early and periodic preventive health screening as provided in the context of the medical home. [Figure 49] Developmental screening is an important tool utilized by the medical home provider for early detection of infants and children whose physical and mental development are not on track. Early intervention services can help these children maximize their potential.

Continued enhancement of public health screening programs is required if women and children are to become and remain healthy and productive citizens. However, the majority of South Carolina clinicians have not been able to attend to these needs because of lack of adequate reimbursement, lack of training, and lack of easily accessible follow-up for those identified at risk. With such an important population based process, we have made this a priority.

Previous Block Grant Priorities

As a point of reference, the priorities from the previous (2000) block grant needs assessment were:

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1. Increase access to quality, risk appropriate care for women, infants and children, including children with special healthcare needs.
2. Improve the nutritional status of women, infants and children, including children with special healthcare needs.
3. Increase access to pre-conceptual and inter-conceptual care.
4. Reduce preventable injuries in the state among the maternal and child health populations.
5. Increase access for women, infants, and children, including children with special healthcare needs to enabling, family support services.
6. Decrease the use of illegal and legal substances among the maternal and child health population.
7. Increase access to newborn home visits.
8. Reduce the percentage of births reported to be unintended.
9. Improve the quality and availability of health and health education services in school settings.
10. Insure that there is a transitional program in place statewide for children with special healthcare needs, for those children aging out of the program.

Appendix A - Stakeholders Invited for the Three Workgroups

Pregnant Women and Infants

Angie Olawksy, RN, Associate Director of Nursing
Virginia Berry-White, Low Country Healthy Start
Karen Waldrop, RN, S.C. March of Dimes
Kim F. Brown, HS-HIV/AIDS
Sylvia Sievers, Ph.D., South Carolina PRAMS Project Coord.
Beth Turner, Pee Dee Health District
Rosemary Wilson, Social Worker
Linda E. Price, Department of Health & Human Services
Cheryl Bonecutter, NP
Jeannie Thompson, RNC, BSN, McLeod Regional Medical Center
Tressa Devlin, MSW, LMSW, Waccamaw Health District
Lathran Woodard, S.C. Primary Health Care Association

Children including CYSHCN

Adrian Able
Rose Alford
Amy Anderson, RN, BSN
Leanne Bailey, RN
Caroline Banis, RN
Jan Blackwell
Cynthia Breymeyer
Courtney Burton, RN
Dr. Becky F. Campbell
Cherry Causey
Michelline Cooper, RN
Evelyn Fulmer, RN
Lucy Gibson
Connie Ginsberg
Jesse Greene, MSN, RN, Director
Paige Griffin
Elin Holgren
A. Baron Holmes III
Lynn R. LeNoir
Suman Marks
Brenda Martin
Debra McCoy
Sarah Moorman, RN, MN
Alesa Murdaugh

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Cynthia L. Robertson
Madie Robinson
Carole Scott, RN
David Steele
Cynthia Sweigart
M. L. Tanner
Sadhana Tolani
Christine Veschusio, RDH, MA
Burnese Walker, Director
Karen Warren, RN
Rosemary Wilson
Mercedes Zubieta

Women of Reproductive Age

Janet Tapp-District representative
Vicki Greene-DND rep
Maxine Williams-APRN rep
Gardenia Ruff-Minority Health rep
Angie Olawsky-Office of Nursing rep
Raymond Barteet-Health Educator rep
Gwen A. Davis-District rep
Kay Lowder-Injury rep
Sharon Biggers-Smoking rep
Erika Kirby-Obesity rep
Susan Frost-Nutritional rep
Edena Meetze-Hispanic/Cancer rep
Susan Clark-Cancer rep
Jane Key-Violence Prevention rep
Brenda Creswell-Social Work rep
Linda Price-DHHS rep
Suzan Boyd-Council to Prevent Teen Pregnancy
MD Resident
AME church representative
Representative from predominantly Black Colleges

Appendix B - Table of Contents for the Data Books Used in the First Workgroup Meeting

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 - Percent of live births whose mothers received intermediate care according to the Kotelchuck index

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- Percent of live births whose mothers received adequate care according to the Kotelchuck index
 - Percent of live births whose mothers did not receive any PNC
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Appendix C - Needs Assessment Workgroup Sessions Survey

	Not Productive	Neutral	Productive
1. Data meeting – workgroup session #1	1	2	3
2. Capacity meeting – workgroup session #2	1	2	3
3. Prioritization meeting- workgroup session #3	1	2	3

What did you like about the needs assessment meetings?

What were some of the weaknesses in the three meetings? How would you make improvements in these areas?

How could your level of involvement in the meetings been expanded?

Appendix D – Online Needs Assessment Survey



Public Health Services Assessment Survey

Below are the ten essential public health services to promote maternal and child health in America. Please mark the response that best reflects how adequately DHEC performs in each of the public health services.

Email **[REQUIRED] - Must be filled to avoid error.**

TO ENSURE CONFIDENTIALITY, THE RESULTS OF YOUR SURVEY WILL NOT BE ASSOCIATED WITH YOUR EMAIL ADDRESS.

As of now, 282 surveys have been received.

Please select one:

- Practicing Physician ☐
- Other State Agency Staff member ☐
- Community member ☐
- Family member or client receiving services ☐
- University faculty ☐
- Insurance provider ☐
- Hospital staff member ☐
- Non-profit organization member ☐
- DHEC staff member – Specify program
- Other – Specify

M = Minimally Adequate
P = Partially Adequate
S = Substantially Adequate
F = Fully Adequate

1. DHEC assesses and monitors maternal and child health status to identify and address problems.

M ☐
P ☐

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	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
2. DHEC diagnoses and investigates health problems and hazards affecting women, children and youth.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
3. DHEC informs and educates the public and families about maternal and child health issues.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
4. DHEC mobilizes community partnerships between policymakers, health care providers, families, the general public, and others to identify and solve maternal and child health problems.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
5. DHEC provides leaders for priority setting, planning, and policy development to support community efforts to assure the health of women, children, youth and their families.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
6. DHEC promotes and enforces legal requirements that protect the health and safety of women, children and youth, and ensure public accountability for their well being.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
7. DHEC links women, children and youth to health and other community and family services, and assures access to comprehensive, quality systems of care.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
	M <input type="checkbox"/>
8. DHEC assures the capacity and competency of the public health and personal health workforce to effectively and efficiently address maternal and child health needs.	P <input type="checkbox"/>
	S <input type="checkbox"/>
	F <input type="checkbox"/>
9. DHEC evaluates the effectiveness, accessibility, and quality of personal health and	M <input type="checkbox"/>

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population-based maternal and child health services.

P ☐

S ☐

F ☐

M ☐

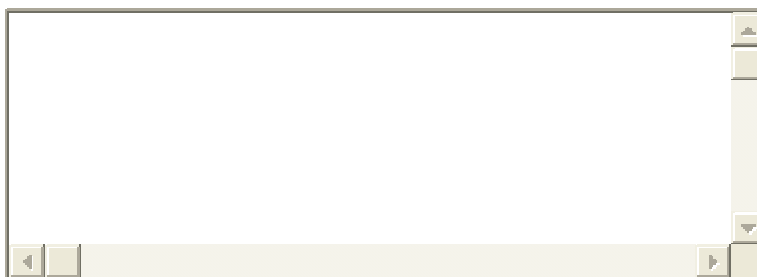
P ☐

S ☐

F ☐

10. DHEC supports research and demonstrations to gain new insights and innovative solutions to maternal and child health-related problems.

11. Comments



Submit

Appendix E - Focus Group Script

Focus Groups with Residents and Faculty at **INSERT LOCATION and DATE**

Overarching goal: To learn how DHEC can improve services for all children and increase access to health care that functions as a medical home.

Focus group objective: To determine how DHEC services can help clinicians

Focus Group Script:

Introduction:

1. Introduce yourself
2. Let the residents know that you appreciate their time in participating and that this information will be used to help improve services at DHEC
3. There are no right and wrong answers and we want to be sure that everyone contributes

Questions: Please follow in the order given.

1. What do you do when a child you are seeing needs additional services?
2. What services does DHEC offer that can help you? Do you refer to DHEC often?
3. What are some challenges you face in referring children to needed services?
4. As a clinician, how do you perceive DHEC?
5. What additional support do you need from DHEC to successfully care for children and their families?
6. What format would you like needed information in? Would you prefer this to be available on the Internet, CD, hard copies or help by telephone?
7. Describe an experience you have had w/ DHEC. Please give both a positive and negative experience.